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Environment, Safety, and Health

Tiger Team Assessment
of the
Los Alamos National Laboratory
Washington, DC 20585

November 1991

MASTER

DISCLAIMER

5.0

MANAGEMENT ASSESSMENT

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5.1 PURPOSE

The Management Subteam conducted a management and organization assessment of environment, safety, and health (ES&H) activities performed by the Los Alamos National Laboratory (LANL) and onsite contractor personnel. The objectives of the assessment were to (1) evaluate the effectiveness of management systems and practices in terms of ensuring environmental compliance and the safety and health of workers and the general public, (2) identify key findings, and (3) identify root causes for all ES&H findings and concerns.

5.2 SCOPE

The scope of the assessment included examinations of the following from an ES&H perspective: (1) strategic and program planning; (2) organizational structure and management configuration; (3) human resource management, including training and staffing; (4) management systems, including performance monitoring and assessment; (5) conduct of operations; (6) public and institutional interactions; and (7) "corporate" parent support.

Interviews were held with over 200 managers, supervisors, and staff personnel representing a wide variety of program interests. Interviewees included personnel from U.S. Department of Energy (DOE)-Headquarters (HQ); the DOE Field Office, Albuquerque (AL); the Los Alamos Area Office (LAAO); LANL; and onsite contractor personnel.

The Management Subteam examined a number of key management areas including DOE policies and directive systems, self-assessment systems, internal and external communications, and individual performance appraisal systems. Documents reviewed included DOE Orders; Secretary of Energy Notices (SENs); LANL Management Directives; program budget and planning guidance; the LANL subcontracts with Johnson Controls World Services, Inc. (JCI) and with Mason & Hanger (M&H); the LAAO contract with Los Alamos County for fire protection; policies; administrative procedures; implementation plans; program/project management plans; management agreements; standard operating procedures; AL, LAAO, and LANL self-assessment activities and program plans; audit and appraisal reports; incident reports; job descriptions; and mission and function statements.

The self-assessment scope, evaluation, strategy, and results are addressed in detail in Section 6.0.

5.3 APPROACH

The Management Subteam conducted its assessment in accordance with the Tiger Team Guidance Manual (February 1990). The Management Subteam also relied upon the draft document Environmental, Safety, and Health Management Performance Objectives and Criteria for Tiger Team Assessments (August 15, 1991). These performance objectives and criteria were among elements used to evaluate findings gathered in the course of the review.

The Management Subteam assessment was conducted between September 23 and November 8, 1991. A list of those individuals contacted by the Management Subteam is provided in Appendix D-2. A list of the subteam members is provided in report Section 5.7; biographical sketches of the subteam members are provided in Appendix A-4.

The Management Subteam initially developed an understanding of the organizational roles, responsibilities, and authorities of LANL through a DOE-HQ briefing prior to the subteam's arrival onsite. This briefing included discussions on organizations and missions of the DOE Office of Defense Programs (DP), AL, LAAO, LANL, and the onsite contractor and results of the AL, LAAO, and LANL Self-Assessments. Once the subteam arrived onsite on September 23, 1991, additional briefings were conducted concerning (1) the results of the AL, LAAO, and LANL Self-Assessments; and (2) specific activities and programs that are associated with the various management performance objectives and criteria. The subteam then conducted interviews and developed an understanding of perceptions of the AL, LAAO, LANL, and onsite contractor personnel concerning ES&H activities at LANL, ES&H policies and goals, and the adequacy of supporting documentation. During the course of the assessment, members of the Management Subteam also interviewed selected DP staff at DOE-Headquarters. The interview process was supplemented by a detailed review of supporting documentation describing such topics as the organization, roles, responsibilities, policies, plans, budgets, procedures, and performance criteria for the organizational elements performing ES&H functions and operational programs at LANL.

To further support the subteam's assessment while onsite, daily debriefings and consultations were held with the Environmental and the Safety and Health Subteams. The objective of these interactions was to identify potential management and organizational problems that might be common to the findings of all subteams and to ensure this information was considered in the identification and evaluation of root causes. Management members were identified to serve as points of contact with the Environmental and the Safety and Health Subteams. These points of contact attended the daily debriefings of each of the other subteams. Additional meetings with other subteams were scheduled as needed to discuss cross cutting issues, findings, concerns, and common root causes.

5.4 MANAGEMENT ASSESSMENT SUMMARY

LANL, situated on approximately 43 square miles of DOE land, is operated by the University of California. For nearly half a century, the Laboratory has pursued basic and applied research and has developed technologies in support of the nation's nuclear deterrent as its primary mission. Research consists of multidisciplinary programs for DOE with oversight by DP; the DOE Offices of Nuclear Energy, Energy Research, and Environmental Restoration and Waste Management; AL; and LAAO. The management culture at LANL, reflected by its close interactions with the University of California, stresses independence and autonomy with limited central management guidance for its research activities.

LANL has taken some positive steps to address the Secretary of Energy's expectations for ES&H excellence, especially at the senior level of management. A LANL course, patterned after the DOE Conduct of Operations course, was developed and presented to managers, staff, and subcontractor

employees. The course included successful field exercises on how to "walk the spaces." An ES&H Coordination Center was established in 1990, including the establishment of an ES&H Hotline and ES&H deficiency ticket program whereby employees can identify ES&H concerns. An intensive sitewide self-assessment of ES&H activities was initiated, which were subsequently confirmed by the Tiger Team's findings. The Laboratory Director's ES&H Policy, Vision, Goals, Objectives, and Strategies for fiscal year 1991 and 1992 was issued. A landlord/Building Manager Program was initiated. However, the ES&H posture has not yet been entirely reflected throughout the Laboratory by line management, working-level staff, and subcontractors. Only after it can be assured that all participants are recognizing and responding to ES&H issues, can the Laboratory have the comprehensive, fully integrated, operational ES&H program, that it is currently striving to achieve.

While LANL conducts strategic planning, it does not have a sitewide strategic plan which addresses programmatic and ES&H activities on an integrated and prioritized basis. Similarly, there are no documented processes or procedures for addressing trade-off decisions between achieving ES&H objectives versus other indirect support activities or programmatic objectives. AL (including LAAO) asserts that since program direction generally flows directly from DOE-HQ to the Laboratory, they are precluded from performing effective strategic planning relative to LANL. Notwithstanding this assertion, AL still does not have a formal, integrated, strategic planning process, subordinate implementation plans, or a planning and budgeting process for incorporating and prioritizing ES&H issues with programmatic activities at LANL.

The Management Subteam found several organizational deficiencies within the Laboratory and LAAO. There is an apparent organizational conflict of interest in the independent audit and surveillance functions of the Laboratory's Quality Operations Office in that it audits organizational segments reporting to the same Associate Director to which it reports, and that it is also responsible for substantive line responsibilities in the quality program. There are numerous instances across the Laboratory where there are duplicative or improperly defined roles, responsibilities, and authorities of organizational segments that lead to inappropriate prioritization and inadequate conduct of ES&H activities. A related deficiency was noted by the subteam in that LAAO does not have formalized management systems fully in place that include definition of roles, responsibilities and authorities for the staff, approved policies and procedures, as well as management systems that provide administrative and program management information to the staff.

The Laboratory has not established a comprehensive and effective Laboratory-wide Environment, Safety, and Health Program. The Occupational Medicine Program has not received sufficient priority from senior Laboratory management to bring it into compliance with DOE requirements and to recognize it as a potentially effective component of an integrated program of safety, health protection, health maintenance, maintenance of a healthy work environment, and accident prevention. At LANL, the conduct of operations requirements specified in the DOE 5480.19 are not well understood by all operational groups, and have not been fully incorporated into daily operating activities. In addition, a formalized quality assurance program that meets

DOE quality standards has not been fully developed or implemented across the Laboratory. There are also inconsistencies in the status of quality programs between directorates and between divisions within individual directorates.

With respect to human resource management, the subteam found that the LANL, LAAO, and AL human resource planning processes are not derived from a top-down strategic or mission planning process and do not systematically examine ES&H staffing needs. None of the three organizations have formalized, uniform, and comprehensive ES&H training programs. With respect to the LANL, the subteam concluded that it does not have a formal, documented career development program or attendant career ladder explicitly geared toward ES&H professionals. The Laboratory does not have an effective program for external recruiting of ES&H professionals. The Laboratory employee performance appraisal process is not being uniformly or consistently applied to assist in the motivation of excellence in ES&H as evidenced by a 1991 Laboratory-wide performance appraisal completion rate of 44 percent. Similarly, Los Alamos National Laboratory employee relations programs do not foster full and effective implementation of ES&H activities.

Most LANL Directorates have not formalized the requirements for ES&H oversight programs for their line organizations to ensure compliance with DOE and LANL ES&H requirements. The Laboratory has not formally established a structured Laboratory-wide independent safety review and appraisal system and has not performed sitewide safety reviews and appraisals of all activities. Triennial appraisals are not performed sitewide as required by DOE 5482.1B, and triennial appraisals for reactors and criticality safety do not fully satisfy the requirement that they be made by personnel not involved in the activities being appraised. These problems are exacerbated by the lack of clear ES&H directions to the Laboratory and the failure of the AL ES&H oversight program to fully identify Laboratory deficiencies. Furthermore, LAAO does not have a formal oversight program to ensure that Laboratory deficiencies are promptly identified to preclude recurrence.

The subteam identified the lack of contract enforcement or compliance as a management deficiency. LAAO has not fully observed the provisions of the DOE prime contract with the University of California. Likewise, LAAO has not fully enforced the requirements and provisions set forth in the DOE prime contract with Los Alamos County for the provision of fire protection services to the Laboratory and other DOE-owned facilities. The Laboratory subcontracts with JCI and M&H do not contain provisions which expressly provide the Laboratory with the right to stop work in the event of an ES&H emergency. The Laboratory's cost plus award fee subcontracts with JCI and M&H do not totally document and consistently apply the intent of the Secretary of Energy with respect to assuring that ES&H factors constitute more than 50 percent of the available award fee. There is no formal Laboratory system for the integration and coordination of day-to-day program or ES&H directions to JCI which would preclude or detect conflicting guidance or priorities for completion of assigned tasks. The current Laboratory policies do not describe the requirements for "make or buy" decisions when the subcontract labor organizations, including task type, are utilized for ES&H staff augmentation. Furthermore, the formal Laboratory system to ensure that non-DOE-funded work proposals and Cooperative Research and Development Agreements receive appropriate ES&H review is not thorough or totally effective.

The subteam noted instances of significant confusion regarding the implementation of the Agreement in Principle (AIP) for Environmental Oversight and Monitoring between DOE and the State of New Mexico. The confusion exists because the roles, responsibilities, and protocols among DOE, the State of New Mexico, and the Laboratory to facilitate full and open cooperation in implementing that AIP are not defined. The roles and responsibilities among the Laboratory, LAAO, and AL in the public affairs area are not clear to all parties and result in an uncoordinated Environmental, Safety, and Health Public Affairs Program. Further, AL and LAAO have not established an effective and coordinated system of communication on ES&H matters with the contractor, the state, local officials, community groups, and the public. LANL has not fully implemented an aggressive proactive ES&H outreach program. The lack of a documented LANL policy for internal communications has resulted in conflicting ES&H information and guidance being provided to employees.

The subteam found that the University of California which is the parent organization does not provide effective ES&H planning or policy guidance to the LANL and that the oversight of ES&H programs by the University of California is minimally effective.

5.5 MANAGEMENT FINDINGS

FINDING MF-1 Los Alamos National Laboratory Strategic Planning

Los Alamos National Laboratory does not have a sitewide strategic plan which addresses programmatic and environment, safety, and health (ES&H) activities on an integrated and prioritized basis.

Discussion

LANL management formulates Laboratory planning on various levels. First, strategic planning is done by the Laboratory Senior Management Group (SMG) and is documented as the Laboratory LA 2000 Plan. In this plan, the SMG sets goals and strategies for the Laboratory. A review of this document shows that LANL does perform strategic planning; however, they do not have a sitewide strategic plan which addresses programmatic and ES&H activities on an integrated and prioritized basis. The strategic planning process lacks formal documentation or procedures for addressing trade-off decisions between achieving ES&H objectives versus other indirect support activities or programmatic objectives. This plan is used primarily as an internal document for the Laboratory management. Second, program planning is performed through development of the Multi-Year Program Plan that contains milestones, resource projections, staffing, and capital equipment needs for major programs at the Laboratory. These program plans are coordinated in the budgetary planning process by Laboratory line and program managers. Third, institutional planning is the formal process by which the Laboratory and DOE reach agreement on the future direction of the Laboratory. This plan, however, is limited in that it does not contain milestones and performance parameters.

The Management Subteam interviews and document reviews revealed that neither the LANL Strategic Plan nor the Institutional Plan have subordinate implementation plans that address both programmatic and ES&H activities on an integrated and prioritized basis.

Furthermore, although the Laboratory management appears to be concerned about the application of ES&H standards to Laboratory operations, there is no evidence of formal Laboratory strategic planning guidance to shape or prioritize Laboratory programs or plans related to such functions.

References

•TSA-1: OA.1-1; •TSA-4: OA.2-1; •IWS/CF-7.

Self-Assessment

This finding was addressed in the LANL Self-Assessment (see Findings PL.1 and PL.2).

FINDING MF-2 Los Alamos National Laboratory Operational Planning

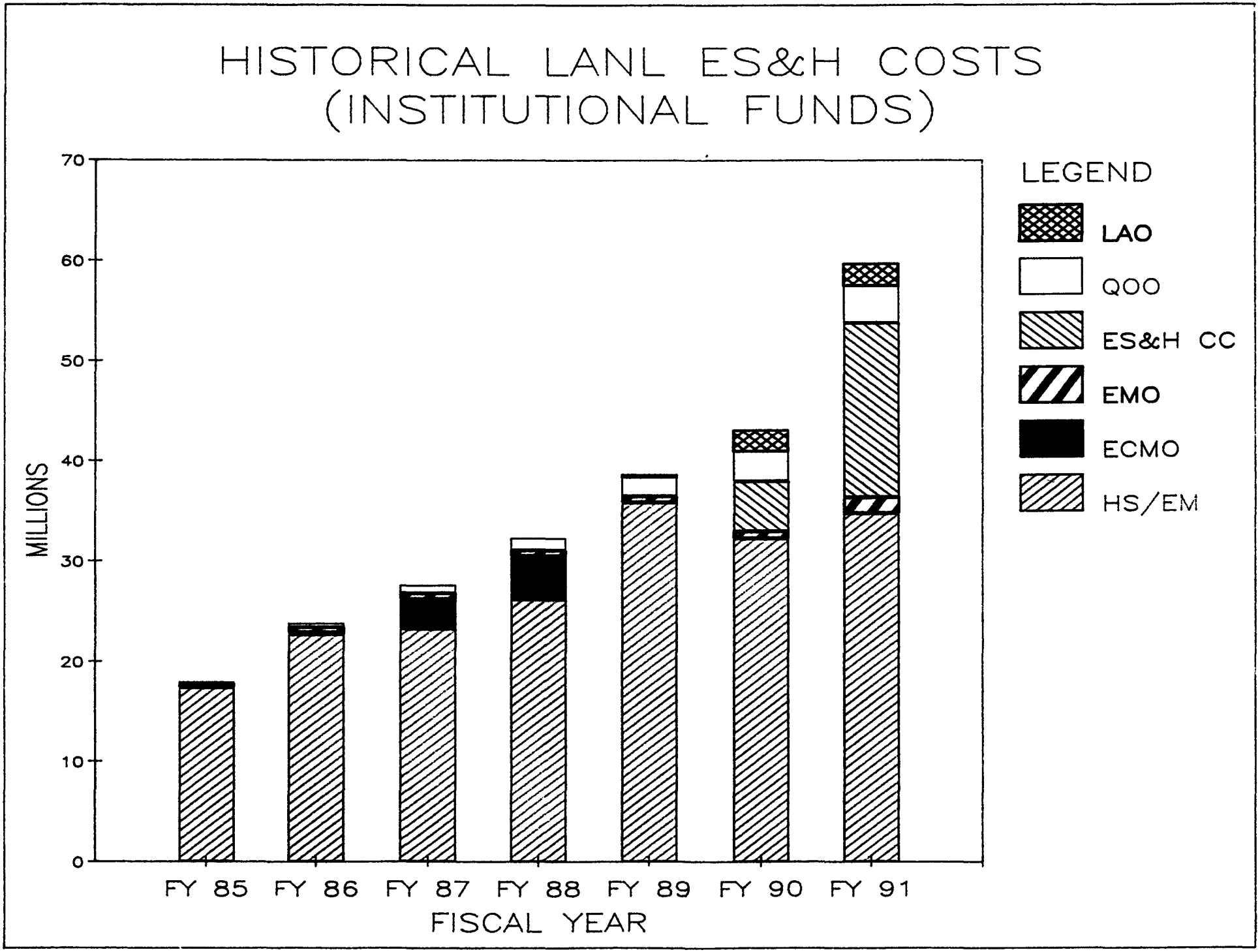
Los Alamos National Laboratory has no formal documentation or procedures for addressing trade-off decisions between achieving environmental, safety, and health (ES&H) objectives versus other indirect support activities or programmatic objectives.

Discussion

The LANL planning and budgeting process includes informal practices for prioritizing safety and health risks and vulnerabilities which will be costed in an indirect cost pool, on a sitewide basis. It involves a typical annual projection of planned safety, health, and other indirect activities. Virtually all of the safety and health indirect activities are the responsibility of Divisions within the Associate Director of Operations Directorate (ADO). An exception is the training function which is currently being consolidated under the Director, Human Resources (DHR). Based on an annual "Indirect Budget Call" issued to ADO, DHR, the Controller, and any other organization requesting indirect funding, such organizations submit to their respective AD or the Controller, a prioritized listing of new or incremental additions to the level of funding issued in the call. These data are merged and reprioritized by the respective AD based on deliberations within each Directorate. They are then submitted to the Controller for final consolidation and merger with base line budget data maintained in the Controller's organization. Some safety and health and other overhead-funded activities considered of lesser importance or urgency by the AD are eliminated before submittal to the Controller. After the described consolidation and merger, there usually is a negotiation primarily between the Controller and ADO, since the ADO is responsible for approximately 50 percent of the indirect budget, to further pare the new or incremental list to a level considered reasonable. Paring is performed on the basis of degree of need (e.g., activities included by virtue of new legal requirements must be funded) and relationship to an informal, self-imposed ceiling on the resulting cost pool distribution rate of 25 to 30 percent. The ceiling is driven by a perceived need to contain or control overheads in order to remain competitive within DOE and with other research entities. The agreed upon data (among the Controller, ADO, DHR, and other Directorates requesting indirect funding) is presented to the Senior Management Group (SMG) comprised of the Laboratory Director, the Deputy Director, and all Associate Directors. A final decision is then made as to the cut-off point beyond which indirect activities, ES&H and other, will not be funded, subject, of course, to the amounts of program funding ultimately received.

It is common knowledge that ES&H expenditures have increased dramatically in the past several years, while direct programs have been relatively static, or even diminished. Figure 5-1 depicts the LANL ES&H costs incurred over the most recent seven fiscal years against "institutional" (i.e., overhead) funds. As indicated, such costs increased from about $18 million to $60 million between FY 1985 and FY 1991. LANL is faced on the one hand with a three-fold increase in ES&H, and on the other with the need to remain "competitive" with other DOE laboratories and various other research entities. Therefore, LANL has included in its ongoing efforts to control the overhead rate a practice of identifying functions which can be reclassified from indirect charge to direct charge to programs or to user organizations for allocation to programs. Two notable examples of such functions or categories

Figure 5-1


HISTORICAL LANL ES&H COSTS
(INSTITUTIONAL FUNDS)
MILLIONS
70
60
50
40
30
20
10
0
FY 85
FY 86
FY 87
FY 88
FY 89
FY 90
FY 91
FISCAL YEAR
LEGEND
LAO
QOO
ES&H CC
EMO
ECMO
HS/EM

are building occupancy costs (converted in FY 1992) and the procurement function (converted in FY 1991). This process not only removes the converted costs from the overhead pool, it also increases the programmatic base, thus in a sense making a double contribution toward complying with the 25 to 30 percent limitation.

The process described is generally typical of major DOE contractors. However, it is deficient in that there are neither documented criteria for (1) the decisionmakers to follow in the prioritization processes, (2) the trade-off decisions between ES&H and other indirect activities, nor (3) for the trade-off decisions between ES&H activities and programmatic objectives. Of particular concern is the informal criterion that institutional overhead may not exceed 25 to 30 percent with limited regard to the ES&H activities that may as a result be curtailed, postponed, or simply not done. The Management Subteam is sympathetic with LANL's endeavor to manage and control overhead costs, but cautions that making ES&H support decisions primarily on a fiscal basis while relegating analytical or risk assessment factors to secondary status must be avoided. That is to say, the budget process must not drive ES&H program decisions.

References

•QA/CF-1, IWS/CF-5, IWS/CF-12, RAD/CF-2, RAD/CF-4, SW/CF-8, SW/CF-9, WM/CF-7, and WM/CF-8.

Self-Assessment

The LANL Self-Assessment addresses this somewhat comprehensive and important finding rather extensively. It is particularly noteworthy that three key findings, KF-3, KF-5, and KF-6, recognize the necessity to address this important area.

FINDING MF-3 **Strategic and Implementation Planning at the U.S. Department of Energy Field Office, Albuquerque and the Los Alamos Area Office**

The U.S. Department of Energy Field Office, Albuquerque (including the Los Alamos Area Office) does not have a formal, integrated, strategic planning process, subordinate implementation plans, or a planning and budgeting process for incorporating and prioritizing environment, safety, and health (ES&H) issues with programmatic activities at the Los Alamos National Laboratory.

Discussion

Strategic planning is a broad-based look at what it is that should be done (i.e., what objectives should be attempted). It is thus, of necessity, a top down process. In the broadest sense, within DOE, strategic planning is carried out at the Program Secretarial Officer (PSO) level at DOE-Headquarters (HQ). However, one of the sources of data into an organization's strategic planning process is that which is received from subordinate organizations. Consequently, subordinate organizations must perform elements of strategic planning in the preparation of that input in order to ensure its quality. Likewise, subordinate organizations must perform strategic planning as part of their implementation of the strategic guidance received from the parent organization. It is an iterative process.

As it pertains to AL, strategic planning and development of guidance occurs at the PSO-Defense Programs (DP) level with direct interactive input from Field Offices. For LANL, strategic guidance for major programs then flows, in most cases, directly from DOE-HQ to the Laboratory. AL and LAAO are essentially bypassed in the transmittal of this guidance. While this makes it more difficult for AL/LAAO to be involved directly in the strategic planning process at LANL, it is still necessary for AL/LAAO to ensure that non-programmatic ES&H issues are considered, both at LANL and at DOE-HQ, and on a complex-wide basis for those facilities for which AL is responsible. As a best management practice, AL needs an integrated strategic planning process to ensure that ES&H issues in AL's areas of responsibility are effectively incorporated into DOE-HQ and LANL strategic planning.

Elements of long-range ES&H planning have existed at AL for a period of time. AL does have in place, for example, a stand alone five-year ES&H plan (dated March 1989, for the period FY 1989-1994). However, strategic ES&H planning has remained in a fragmented form and appears to have been driven largely by the requirements of individual PSOs. Further, it is not documented with clear formal procedures, as evidenced by the fact that this portion of the strategic planning process has not been aggressively pursued due to other commitments. In addition, there is no evidence that the strategic planning which went into this particular plan involved an attempt to integrate ES&H planning needs with programmatic planning needs to produce a single coherent strategic plan addressing both issues. An interesting example here is the fact that the September 1991 AL Self-Assessment cites a prioritization process as a tool which would aid in addressing difficulties in efficiently implementing the many new and evolving ES&H management systems (key finding #3 - ES&H Management Systems). A prioritization system would allow effective utilization of resources to develop and implement these systems in the most efficient manner possible. Effective strategic planning incorporating a

prioritization and integration of ES&H and programmatic needs should help address this particular finding.

Also, as it pertains to LANL and AL/LAAO, long-range planning consists largely of what is present in the institutional plan. This planning process, long treated lightly by the Laboratory and DOE, is showing signs of resurrection. It further shows some increased emphasis on ES&H issues. But, the institutional plan has not been and is not a true strategic plan, and the fact remains that the AL/LAAO involvement in this process, while increasing somewhat, remains limited.

It is noted that AL is currently evaluating the strategic planning process via the mechanism of a Process Management Team (PMT). The evaluation has not been completed.

Finally, AL has a formal process for allocating funding; however, the present system does not ensure that ES&H priorities are identified for individual sites. This lack of an institutionalized ES&H prioritization process as part of a strategic planning process could result in insufficient resources to meet Laboratory ES&H needs. Furthermore, to ensure that the Laboratory achieves its ES&H program goals and corrective action plans, in coordination with DOE priorities, a formalized Field Office-wide prioritization process should be developed and implemented. This formalized prioritization system would allow DOE to identify and analyze ES&H risks and vulnerabilities for each site; therefore, allowing the Laboratory to achieve a more coordinated ES&H priority listing.

References

•MF-11; •TSA-4: AS.1-2; •IWS/CF-7.

Self-Assessment

Neither the AL nor the LAAO Self-Assessments identified this finding.

FINDING MF-4 Los Alamos National Laboratory Occupational Medical Program

The Occupational Medical Program at Los Alamos National Laboratory has not received sufficient priority from senior management to bring it into compliance with the U.S. Department of Energy requirements and recognize it as a potentially effective component of an integrated program of safety, health protection, health maintenance, maintenance of a healthy work environment, and accident prevention.

Discussion

The Occupational Medical Program at LANL has not received sufficient priority from senior management to bring it into compliance with program requirements established by the Laboratory and in DOE Orders. LANL management has not complied with previous recommendations from DOE-Headquarters and LANL-requested reviews. In FY 1991, management provided a budget which could not be fully utilized by the program because management did not allow acquisition of full-time equivalents (FTEs) needed to accomplish the defined program. Budget authority was unused at the same time the Occupational Medical Office was not able to complete all required LANL staff and subcontractor physical exams. This lack occurred despite increased efficiencies provided to the programmatic effort by new equipment and improved work processes. The lack of the additional staff did not permit a program to be instituted that would help identify work-site hazards and those employees exposed to these hazards. In addition, because of the lack of approximately four full-time nurses, the backlog of physical exams noted above amounts to approximately 3,000 to 4,000 examinations. The staff have not become familiar with job tasks, work-site environments, and related health hazards as required in DOE 5480.8.

It appears that the important role that medicine plays in the health aspects of the LANL ES&H program is not fully appreciated by senior management. Indications of this include the fact that DOE 5480.8, Section f., "Minimum Requirements and Guidelines for Organization and Staffing for Contractor Occupational Medical Program," notes that:

> "...(1) The Occupational Medical Director.
> ...c. Shall report at a senior management level to assure program effectiveness...have direct access to top management ..."

At present, the Medical Director, LANL Health Service reports through the following levels of management to the Laboratory Director:

- Laboratory Director/
  Deputy Laboratory Director--Level 1
- Associate Director--Level 2
- HS Division Manager/
  HS Division Deputy Division Manager--Level 3
- Medical Director, LANL Health Service--Level 4

This reporting chain does not show the Medical Director reporting at a senior management level, although it may be argued that he has access to top management.

Supporting the importance DOE is now placing on occupational medicine, the signed but not yet distributed DOE 5480.8A notes the following in Section g. (1) (b):

> "Site Occupational Medical Director ... Shall report directly to the Contractor Site Manager or appropriate Laboratory Director and shall have access to and frequent communication with contractor management to ensure program effectiveness."

DOE 5480.8A has been approved at DOE-Headquarters and is expected to be distributed in November 1991. Compliance with the new order will address this finding. But, beyond literal compliance, the Medical Director should be provided with sufficient priority in the Laboratory's new emphasis in Environment, Safety, and Health (emphasis on Health), to develop the health programs to their maximum potential.

References

•TSA-2: OA.8-1, OA.8-2, MS.1-1, MS.1-2, MS.1-3, MS.3-1, MS.3-2, MS.3-3, MS.3-4, MS.3-5, MS.3-6, MS.4-2, and MS.4-3.

Self-Assessment

This finding was identified in the LANL Self-Assessment in Section 4.2.22, Findings MS.1 through MS.5.

FINDING MF-5 Los Alamos Area Office Formalized Management Systems

The Los Alamos Area Office does not have formalized management systems that include definition of roles, responsibilities, and authorities for the staff, approved policies and procedures nor management systems that provide administrative and program management information to the staff.

Discussion

LAAO does not have the required range of formalized management systems to allow it to increase the efficiency and effectiveness of the staff in fulfilling its role for the Los Alamos site. This lack of precision in formality of doing business encourages inappropriate situations such as where a site contractor contacts the Albuquerque Office or Programmatic Offices at DOE-Headquarters directly instead of utilizing established channels through LAAO to resolve issues when a disagreement develops between LAAO and the Laboratory with regard to site activities. This problem is aggravated by the lack of LAAO "oversight presence" as noted by LANL staff. During interviews of LANL staff whose jobs included both programmatic responsibilities in their offices as well as field activities, a significant fraction noted that they had never had contact with a LAAO staff member in any official regard. With the establishment of Facility Representatives from LAAO, the daily contact on an official basis will greatly increase the LAAO oversight presence. Also, strengthening the access of the LAAO staff to current project management information will increase their effectiveness for projects for which they are responsible.

At the LAAO staff level, there appear to be varying degrees of formality in job definition with the longer established positions and individuals having more precisely defined job descriptions. Many staff are operating with generic job descriptions that do not include most of their verbally assigned specific responsibilities. In some cases, the job is one in which the staff member defines the authorities and accountabilities through self initiative and experience. This has led to confusion of roles and responsibilities and a lack of consistent focus in some areas. There appear to be only minimal conflicts or territorial clashes between staff in the office because the defined scope of activities for the office significantly exceeds the number of staff currently assigned.

Defined roles and responsibilities of the branches vary in quality with some defining documents approved and at least one branch having recently submitted its formal statement of functions for approval. Illustrative of the net effect of this problem is the fact that when four staff were asked a question regarding stop work and restart authority, all understood their ability to stop work, although one noted his concern that LANL might not agree. With regard to restart authority, one stated uncertainty regarding who had authority, one stated LANL had authority, one stated the Deputy Manager of LAAO had authority, and one stated the Manager of LAAO had authority. Not one commented on the existence of the guidelines in SEN-16A for restart of facilities nor mentioned the DOE/LAAO/LANL Start-Up, Restart Protocol Meeting Minutes, dated August 21, 1991, where some aspects of the restart issue were addressed.

Other management systems which support environment, safety, and health that are fragmented or non-existent include financial or project management progress tracking and reporting, administrative activities, commitment tracking and trending, and training and staff development. Work is progressing on a staffing plan, but neither a training program nor a career path progression plan have been established for the staff.

Self-Assessment

This finding was identified in the LAAO Self-Assessment.

FINDING MF-6 **Los Alamos National Laboratory Quality Operations Office**

There exists an apparent organizational conflict of interest in the independent audit and surveillance functions of the Los Alamos National Laboratory Quality Operations Office in that it must audit organizational segments reporting to the same Associate Director to which it reports.

Discussion

Director's Policy No. 110 Subject: Quality. states that:

> "The Quality Operations Office (QOO) shall be the Office of Primary Responsibility and shall develop, provide overall direction for, and maintain the Laboratory programs and hierarchical procedures implementing this policy; conduct reviews and audits to measure the programs effectiveness and to assist in implementation;..."

Other QOO responsibilities include promulgating the program to subcontractors and ensuring effective implementation, assisting line managers in developing standards and controls for activities, and training and development of management indicators for the program.

The QOO has responsibilities for facilitating quality program development as noted above as well as audit functions, which pose an organizational conflict of interest. The QOO reports to the Associate Director, Operations, who also has responsibility for line functions such as Engineering which the QOO will be required to audit. Thus, the audit function is neither organizationally independent as required by the Nuclear Regulatory Commission (NRC) in commercial nuclear industry nor does it meet the generally accepted independence standard in quality organizations across the country.

Self-Assessment

This finding was not identified in the LANL Self-Assessment.

FINDING MF-7 Los Alamos National Laboratory Quality Program

A formalized quality assurance program that meets the U.S. Department of Energy quality standards has not been fully developed or implemented across Los Alamos National Laboratory. There are inconsistencies in the status of quality programs between directorates and between divisions within individual directorates.

Discussion

A formalized and integrated quality program has proven to be an important contributor to increasing the product value of any organization, whether the product is research related or is component production. Effective programs bring a consistency in value in all activities from purchase and receipt inspection to procedurally controlled activities and important records of critical maintenance on valuable research facilities.

The Laboratory has diverse functions which have resulted in an inconsistent approach to the concepts of quality assurance. A specific example is that the audit and appraisal functions of the Quality Operations Office (QOO) are neither proactive nor applied consistently across the Laboratory. Quality Assurance (QA) appraisals are performed to satisfy requirements where specified by a sponsoring program. This is also the case for Non-Conformance Reports (NCRs) and Corrective Action Requests (CARs).

Multiple quality concerns at the reactor, critical experiment, and tritium facilities were noted. These included the lack of a review or audit program to assess line implementation, the lack of nonconformance or corrective action programs, procurement system deficiencies, lack of management commitment, and lack of effective implementation of quality plans.

No strong quality assurance ethic exists across the Laboratory. In certain organizational segments, a strong quality assurance ethic has developed. Typically, these efforts have been programmatically driven. In other organizational segments, no similar quality effort was required programmatically. As an example, the Heat Source Technology Group and the Nuclear Fuels Technology Group of the Nuclear Material Technology Division where the Heat Source Technology Group and the Nuclear Fuels Technology Group have significant quality programs due to quality standards imposed by the sponsoring program. In contrast, other groups in the Division have not implemented any quality assurance plan.

Staff across the Laboratory also have significant differences in understanding of quality assurance concepts and principles. Critical to this issue is that quality assurance representatives at the Laboratory do not have to meet any minimum qualification requirements. Training and other professional development programs are not yet established to ensure that they will have the knowledge to develop or to coordinate future quality program activities within their groups. Line personnel have been found to be unaware of their responsibilities in attainment and improvement of quality, have not had these responsibilities communicated to them by management, and cannot be expected to meet existing programmatic requirements, much less the enhanced programmatic activities planned for the future, without corrective and compensatory actions being undertaken.

In December 1990, the QOO was established to satisfy the Laboratory-wide need for an integrated programmatic effort. An assessment was performed that characterized the weaknesses in the QA Program as the lack of the following: a management information capability; a verification component; a corrective action component; specificity and guidance for program users; undefined organizational roles and responsibilities; and an organizational-based approach to quality versus an activity-based approach. The Laboratory's Quality Assurance Manual was issued September 9, 1991, and is to be effective January 6, 1992. At present, the QOO suffers from a staff which is relatively inexperienced in quality concepts. Training programs have not been developed. A Quality Management Plan has not been developed.

References

•TSA-1: QV.1-1, QV.1-2, QV.1-3, QV.2-1, QV.3-1, QV.4-1, QV.5-1, QV.5-2, QV.6-1, QV.7-1, and PT.3-1; •TSA-2: QV.1-1, QV.1-2, QV.1-3, QV.1-4, QV.2-1, QV.3-1, QV.4-1, QV.5-1, QV.6-1, QV.7-1, TC.9-2, TS.3-1, PT.2-1, PT.3-1, PT.4-2, and PT.11-1; •TSA-3: QV.1-1, QV.1-2, QV.2-1, QV.3-1, QV.5-1, QV.5-2, QV.5-3, QV.6-1, QV.7-1, TS.3-1, and PT.3-1; •TSA-4: QV.1-1, QV.1-2, QV.1-5, QV.1-6, QV.3-2, QV.4-1, TC.8-1, PT.1-2, PT.2-1, PT.3-2, PT.3-3, and PT.3-4; •QA/CF-1, QA/CF-2, QA/CF-4, QA/CF-5, QA/CF-6, QA/CF-7, QA/CF-13, QA/CF-14, IWS/CF-8, and TCM/CF-10.

Self-Assessment

This finding was identified in the LANL Self-Assessment.

FINDING MF-8 **Los Alamos National Laboratory Environment, Safety, and Health (ES&H) Program**

Los Alamos National Laboratory has not established a comprehensive and effective Laboratory-wide Environment, Safety, and Health (ES&H) Program.

Discussion

An effective ES&H Program has certain characteristics that enable, over time, ES&H aspects to become an integral part of daily programmatic activities by staff throughout the organization. Without the organizational segments and their staff accepting appropriate and defined roles and responsibilities as a normal part of their function for the Laboratory, ES&H becomes another unwanted burden, and programmatic efforts suffer. A strong ES&H management presence in both the traditional line and staff organizations and a consistent, organization-wide approach is a vital part of a successful programmatic effort. Management leadership is not entirely pervasive at all levels of the organization below the Laboratory Director in the ES&H Program at LANL.

In the LANL organization, operating Directorates have a variety of different missions ranging from research and applications in weapons, energy, life sciences, and conventional military equipment to software development, and specialty application projects using technologies that cut across all traditional organizational segments at the laboratory. The diversity of Laboratory activities is the single most important consideration for developing a consistent, coordinated, Laboratory-wide ES&H program that can be institutionalized through all the Directorates.

The concept of Laboratory-wide policies and the value these can bring has been realized recently and acted upon by executive management of the Laboratory. An initial 15 approved Laboratory Director's Policies, to be placed in the ES&H Manual, were distributed on September 20, 1991. This is the first step in developing a hierarchical series of policies, programs, and procedures that will replace the existing system of Administrative Requirements and Technical Bulletins. The new policies represent the first step in a process that is consistent with the required integration and documentation as well as the philosophies espoused in DOE 5480.19.

The history of the ES&H programmatic effort at LANL provides a critical perspective of the lack of programmatic emphasis that could be used to characterize the ES&H support function. Sufficient management priority has not been provided to ES&H efforts until recently. The ES&H activity suffers from lack of specific programmatic documentation, lack of integration between operating Division efforts and ES&H program organizations, and lack of priority for suitable resources including recruiting of ES&H professional staff to fill identified needs. Discussions with staff note that the traditional attitude of treating the ES&H professional and his/her activities with indifference is only now changing. While there are new and more positive attitudes being displayed, there are also new criticisms directed towards the enhanced ES&H emphasis that are focused on the perceived overhead burden. Scientists and engineers have widely expressed their concerns that the financial costs associated with ES&H activities make the individual researcher less competitive for research dollars. Other related issues include the fact

that there still appears to be an attitude that quality assurance in any guise is an impediment to progress.

The ES&H organizations have been particularly ineffective in establishing Laboratory-wide programs vital to developing an integrated and comprehensive approach to major ES&H issues. As an example, the asbestos program has been under development for more than 2 years, but is still not formalized as there are no documented roles and responsibilities for any of the players. While the Engineering Office has responsibility, because the asbestos issue is primarily a facilities issue, there is no individual in charge.

Staff report on being asked to develop Laboratory-wide programs, which when brought forward for review and approval, are stymied at some level because of lack of management support and are never adopted. The industrial hygiene function seems to be particularly deficient in this area. Examples include the confined space program, the Lab Standard to meet Occupational Safety and Health Act (OSHA) 29 CFR 1910.1450, the Hazardous Waste Operations Program, and the Emergency Response Program. Even programs internal only to the Industrial Hygiene Group such as the Health Hazard Inventory and Sampling Strategy have not had sufficient support to move forward. Priorities are changed rapidly to address problems of the day, which means there are no real priorities. Important parts of the ES&H effort appear to be totally reactive rather than proactive. An example would be the removal of funding from the asbestos abatement program in the facilities to install ground fault interrupters on water fountains without consideration of the industrial hygiene staff views.

Lack of specific roles and responsibilities for ES&H activities has been described by Division managers as a major issue. Staff report during interviews that they operate from generic job descriptions that are so general as to be useless. No quantifiable goals and objectives in ES&H activities have been identified for individuals or organizations that can be specifically measured and trended. As discussed below, even annual individual performance appraisals have been ignored in some cases.

Personnel issues are becoming more critical and must receive prompt attention by management. In one group, about 90 percent of the staff have less than 2 years experience, and there are so few experienced staff to provide advice, that the young staff operate with a significant feeling of uncertainty as to whether or not they are providing the service that is expected from them. In this same group, annual performance appraisals were not performed this year because management informed them "...that everybody was too busy." The deliberate disregard for this important aspect of individual and organizational development, and a formal policy of the Laboratory, was ignored or went unnoticed by higher management.

Compounding the issues of maintaining a stable and experienced staff is the fact that the allocation of financial resources and distribution of work has not necessarily been handled effectively. While overall funding for ES&H activities has increased dramatically in the last few years, a significant portion of the increase has been due to direct funding for waste management programmatic activities. ES&H activities associated with expanded Laboratory programs, the indirect costed programs, have increased also but with some notable imbalances in work load versus resources. In one group, the actual work load of sample analysis has increased three or four fold over a period of

3 years. During the same time period, the staff has increased by approximately 15 percent. Increased efficiencies of operations and utilizing better technologies has reduced the impact to a certain extent, but a significant part of this work effort has had to be absorbed by the working staff through more hours and increased intensity of effort. Because these specific activities are indirect costs associated with maintaining overall Laboratory programs, insufficient management priority has been given to resolving the issue. Only now, with discussions addressing the development of "recharge" concepts, will there be an opportunity to place such important Laboratory-wide ES&H support activities on a consistent basis for all users of the services as well as the performing organizations.

There appears to be tacit acceptance by the Laboratory that the ES&H programs are weak. A more appropriate description is that some are so ineffective as to be non-existent. LANL management plans to strengthen them in the future after the Tiger Team has departed.

References

•TSA-1: OA.6-1, TS.1-1, RP.11-1, RP.11-3, PP.2-1, PP.4-1, PP.5-1, WS.4-2, and FP.2-1; •TSA-2: OA.1-1, OA.1-2, OA.2-3, OA.3-1, OA.3-2, EP.1-1, PT.2-1, RP.1-2, RP.1-3, RP.10-1, PP.3-1, and PP.4-3; •TSA-3: OA.5-1, TC.4-1, AX.3-1, RP.11-1, PP.4-1, PP.6-4, PP.6-5, PP.6-6, and PP.6-7; •TSA-4: OA.1-1, OA.2-1, OA.3-1, TC.1-2, EP.1-1, TS.2-3, FR.1-1, FR.1-2, RP.1-1, PP.1-3, PP.2-1, PP.3-1, PP.4-1, PP.4-2, PP.6-1, PP.6-2, and AS.1-2; •IWS/CF-1, IWS/CF-9, IWS/CF-10, WM/CF-3, WM/CF-8, WM/CF-16, RAD/CF-1, RAD/CF-6, RAD/CF-12, RAD/CF-13, SW/CF-7, SW/CF-9, SW/CF-12, TCM/CF-1, TCM/CF-2, TCM/CF-5, TCM/CF-6, TCM/CF-9, and TCM/CF-13.

Self-Assessment

This finding was partially identified in the LANL Self-Assessment.

FINDING MF-9 Los Alamos National Laboratory Conduct of Operations

At Los Alamos National Laboratory, the conduct of operations requirements specified in DOE 5480.19 are not well understood by all operational groups, and they have not been fully incorporated into daily operating activities.

Discussion

The requirements for more formalized operations as noted in DOE 5480.19, "Conduct of Operations Requirements for DOE Facilities," provide for a very pragmatic structure of policies, procedures, training, documentation, trending, and reporting to ensure safe and effective operational activities and interfaces with other activities such as maintenance and engineering.

There are DOE requirements transmitted by memorandum from the Under Secretary of Energy in November 1989, for contractors to conduct operations in accordance with the Institute of Nuclear Power Operations guidelines. This memorandum also required the preparation of procedures to implement these guidelines, along with plans and schedules for implementation, by January 8, 1990. DOE 5480.19 was issued on July 9, 1990, and provided more specific direction and guidelines. The Order requires that each contractor review their programs to the guidelines and document conformance to the requirements of the Order. This documentation is required to include, as a minimum, specification of the applicability of each guideline, where and how each of the guidelines are applied in existing policies and procedures, and identification of any deviations or exceptions. This documentation is to be approved, as a minimum, by the Head of the Field Element. Heads of Field Elements are required to ensure that contractor plans, procedures, and programs are in place and are effectively implemented as required to meet the requirements of the Order.

LANL recently initiated a significant effort to address the requirements of DOE 5480.19. Initial training provided executive management in a Conduct Of Operations (COO) course provided by DOE-Headquarters was so well received by senior management that it was copied and modified to a 3-day course to be more applicable to LANL, with subsequent training provided to 550 Laboratory managers, staff, and subcontractors during August 1991. Subcontractors participated in this effort either through taking the LANL COO course or by providing their own versions. This has been a positive effort that should greatly aid the ongoing transition to the philosophy of operations expressed in the Order.

However, significant weaknesses exist in the implementation of the requirements of DOE 5480.19. These weaknesses are most apparent in the observations made by the Tiger Team members investigating the operational activities across the Laboratory. Some areas in the Laboratory, specifically those associated with nuclear weapons testing, have a long history of successfully following the concepts and requirements of the Order. Other areas, however, lack sufficient policies, guidelines, criteria, or standards for facility operations; have situations where procedures are not consistently prepared, revised, or controlled; have no active controls on facility status; have no configuration control programs or have deficient tag-out and lock-out programs; and have deficient or absent facility-specific training for some operators and management of those facilities.

In some areas, there appears to be a pervasive lack of attention to detail, a lack of knowledge on the part of the individual, and a general disregard for formality of operations. Many activities were found to be performed through verbal agreements rather than documented policies, plans, or procedures. There appeared to be a disconnect between responsibility and authority. Active command and control over all critical facility activities was found to be lacking in some areas. This included configuration control, maintenance, and system design changes and modifications which were not always managed effectively or even known by management or supervisory personnel. Some weaknesses were observed in operator knowledge and performance of routine and off-normal duties. Areas had entire systems, including valves and other components, which were not labeled so that operator control, recordkeeping, and recognition and response to alarms and other conditions were not facilitated.

References

•TSA-1: OA.1-1, OA.3-1, OA.7-3, QV.1-2, OP.1-1, OP.2-1, OP.2-2, OP.3-2, OP.4-1, OP.4-2, OP.5-1, OP.6-2, AX.1-5, and PP.4-1; •TSA-2: OA.1-1, OA.1-2, OA.3-1, OA.5-1, OA.5-2, OA.7-1, OP.2-2, OP.3-1, OP.3-2, OP.3-3, OP.3-4, OP.4-3, OP.4-4, OP.5-4, TC.1-1, TC.1-4, TC.2-1, TC.2-2, TC.2-3, and TC.2-4; •TSA-3: OA.2-3, OP.1-2, OP.2-2, OP.2-3, TC.4-2, AX.7-1, and TS.2-2; •TSA-4: OA.3-1, OA.7-1, OP.2-2, OP.4-1, OP.6-1, AX.1-5, AX.1-6, AX.5-1, TS.1-1, TS.2-2, TS.2-3, TS.4-1, PT.1-1, PT.1-2, PT.1-4, PT.3-2, PT.3-4, PT.6-1, PT.8-2, EA.4-1, PT.1-2, and PT.1-4; •SW/CF-11, TCM/CF-6, and TCM/CF-12.

Self-Assessment

This finding was identified in the LANL Self-Assessment.

FINDING MF-10 **Los Alamos National Laboratory Roles, Responsibilities, and Authorities**

There are numerous instances across the Los Alamos National Laboratory where there are duplicative or improperly defined roles, responsibilities, and authorities of organizational segments which lead to inappropriate prioritization of environment, safety, and health (ES&H) activities.

Discussion

The detail and precision needed to establish structure and to properly define roles, responsibilities, and authorities for organizational segments is contrary to the informal attitudes towards structural formality prevalent at the Laboratory. As a result, either conflict can result regarding responsibilities over equipment, programs, or facilities or neglect can result where no responsibility is taken by anyone. These two cases represent examples of possible negative impacts on important ES&H activities.

Some aspects of this problem as it affects the ES&H Program at the Laboratory are discussed in Finding MF-8 relating to incorrect job descriptions. This is the most basic area where proper definitions should exist, but do not. At higher levels, the Health and Safety Division (HS) and the Environmental Management Division (EM) are responsible for programmatic efforts and for providing technical specialty support on an as-needed basis. Unfortunately, with the proliferation of ES&H specialists in the operating divisions, policies and programmatic thrusts are being determined in these divisions by default. Where Laboratory-wide guidance has not yet been established, the operating divisions must break new ground to address issues when either the HS or EM staff cannot participate because of other priorities. The operating divisions must solve issues that come forward. Once in place, a divisional effort may become a Laboratory de facto standard. Illustrative of this problem are the safety and radiation protection officers at the tritium facilities who reported that they neither needed approval from HS to initiate changes in standard operating procedures nor needed to accept recommendations from HS.

With regard to work activities in the field, HS-3 reviews the majority of work orders or authorizations from an ES&H perspective prior to their release to Johnson Controls World Services, Inc. (JCI). HS-3 conducts only a limited number of field inspections because of a mismatch of staff and number of open work orders. The engineering groups that actually authorize the work also exercise oversight of the field work in progress. Although these line organizations have a responsibility for the work they have authorized, they rely heavily on HS-3 to assure that appropriate ES&H controls and requirements have been applied. Confusing this slightly more is that responsibilities for ES&H oversight appear more obscure for those tasks where there is an assigned "landlord." In this situation, the operating organization or landlord requests the work which is authorized by Engineering after coordination with HS-3. All three organizations could potentially exercise some degree of oversight, but it is not clear as to "ownership" or final responsibility.

Another instance where no sitewide guidance or requirements exist lies in the responsibility for maintenance of Class B equipment (i.e., used for programmatic purposes). Each organizational unit makes its own decision on planning, control, conduct, and documentation of maintenance for which it is

responsible. This is the case whether the units use their own staff or JCI. The Facilities Engineering Division is responsible for maintenance on Class A equipment (i.e., buildings and utilities), which has been mostly assigned to JCI. Maintenance and modification of Class A equipment has been conducted without the knowledge or consent of the landlord or building manager. This is attributed to the fact that JCI performs a substantial amount of self-initiated work under open or blanket work orders such as general or preventive maintenance, or custodial services. There have been a number of occasions when they have scheduled work crews into an area during non-working hours without notifying the building owner or responsible operating official. As a result, the work crew was not made aware of any short-term or new hazards.

Funding sources for onsite ES&H-related building and facility maintenance or modifications have not been well defined or consistently applied by the Laboratory which could contribute to delays in initiating appropriate actions. The distinctions between Class A and Class B equipment or facilities is not always apparent. Delays have occurred while these issues are being resolved between the engineering organization and the operating official. In other cases, the operating organization may request completion of an ES&H-related task which, in the opinion of the engineering organization, is a low priority item in relation to other tasks competing for common funding. It might be rejected or placed on hold for an extended period. However, if the organization is willing to provide funding, the task can be completed rather quickly. This situation offers the potential for delay of ES&H-related tasks and raises questions concerning the propriety of using multiple funding sources for common tasks. It is understood that there are several hundred work orders currently in this holding pattern.

Specific examples where confusion over roles, responsibilities, and authorities affect the ES&H program are as follows:

- Establishment of the ES&H Coordination Center created a conflict with the programmatic developmental efforts of HS and EM. Programmatic documents have been prepared, approved, and distributed without formal HS or EM participation in their areas of expertise.

- Administrative confusion and organizational uncertainty have been reported as to whether Material Management, Health and Safety, or Waste Management and Operational Security Divisions are in fact responsible for the LANL packaging and transportation program.

- It was found that the Field Engineering Group of Facilities Engineering personnel operate the safety-related systems of a facility while another group has been assigned responsibility for safety of the facility. This conflict has been attributed to a desire to centralize all service organizations.

- Both the General Manager of Mason & Hanger (M&H) and his ES&H Manager are of the opinion that it has been difficult to focus appropriate Laboratory attention on ES&H matters of concern to M&H management. For example, M&H has had a continuing concern since 1986 about the potential for the guard force to be exposed to excessive carbon monoxide fumes at Guard Station 329. Continued efforts by M&H with the Laboratory to fully characterize this

problem and arrive at a mutually acceptable solution have not been successful.

- The LANL Security Organization (OS-10) is responsible for technical direction and oversight of the operational activities of M&H, but it appears that they do not play a strong role with respect to line responsibility or ownership for ES&H requirements of the operation. Instead, OS-10 relies almost exclusively on the HS-2 staff to provide ES&H management direction and oversight.

- JCI is contractually responsible for assuring that all employees are suitably equipped with protective clothing and equipment in areas where it is required by Laboratory policy. There are a number of examples where this requirement has not been enforced by either the Laboratory or JCI management. Janitors, in particular, often report to a location without required safety shoes. In several cases, the Laboratory program organization has purchased safety shoes for the custodians in order to assure that their work areas would be cleaned. This practice is not consistent with either the Laboratory/JCI contract or the agreements between JCI and the labor union. Situations were found at TA-55 where two or more groups were assigned responsibility for the same safety function or safety-related system.

- The wet vacuum system at TA-55 was found to be the responsibility of Nuclear Materials Technology (NMT)-8, but JCI personnel did some operating work and technicians from four other NMT Groups also performed operations on occasion, showing divided and undefined responsibilities.

- The technical support system at TA-55 was found to be fragmented in the distribution and performance of technical assignments.

- Responsibilities for implementation of various portions of the fire protection program at TA-55 is distributed between Engineering (ENG)-8, HS, JCI, and the Los Alamos Fire Department, and individual facilities management.

References

•TSA-1: OA.1-4, AX.1-1, EP.1-1, and FP.1-1; •TSA-2: OA.6-1, OA.6-2, TS.1-2, and MS.3-1; •TSA-3: OA.1-1, OP.1-1, MA.5-1, TC.1-3, TS.1-1, and EA.1-1; •TSA-4: OA.1-6, OA.6-1, OA.6-2, TS.1-1, TS.1-2, SS.3-2, PP.1-1, PP.2-4, PP.3-1, and PP.3-2; •IWS/BMPF-1 and SW/CF-11.

Self-Assessment

This finding was partially addressed in the LANL Self-Assessment.

FINDING MF-11 **Los Alamos National Laboratory, Los Alamos Area Office, and the U.S. Department of Energy Field Office, Albuquerque Human Resource Planning Process**

The Los Alamos National Laboratory, the Los Alamos Area Office, and the Department of Energy Field Office, Albuquerque human resource planning processes are not derived from a top-down strategic or mission planning process and do not systematically examine environment, safety, and health (ES&H) staffing needs.

Discussion

Integration of the programmatic and ES&H objectives is the cornerstone of the Secretary's 1989 Ten-Point Initiative and is also addressed in SEN-25. To achieve this integration of programmatic and ES&H objectives; LANL, LAAO, and AL must have staff who are knowledgeable, qualified, and trained in the ES&H disciplines necessary to support the particular organization's mission. This suggests that human resource planning should be conducted in an integrated fashion on an organization-wide basis, should logically flow from an organization-wide strategic or mission planning process, and should be based on an evaluation of ES&H risks and vulnerabilities.

The objective of the human resource planning process should be to comprehensively identify those staffing requirements necessary to support achievement of the programmatic and ES&H objectives. This process should also include identification of any specialized training which is critical for performance of the functions required of the additional staff. Finally, human resource planning should be conducted in a fashion which enables senior management to identify necessary trade-off decisions regarding staff and budget needs and to establish priorities for staff acquisition in situations of manpower ceilings or budgetary limitations. Specifically, these trade-off decisions would include evaluations of the risks and benefits to the LANL, LAAO, and AL missions (i.e., programmatic and ES&H) associated with obtaining staff members with expertise in non-ES&H disciplines as opposed to adding staff with backgrounds in ES&H-related disciplines.

LANL

Currently, LANL conducts a strategic planning exercise which has been documented in "LA 2000." The Laboratory's intent has been to perform the "LA 2000" exercise biannually and to reexamine priorities annually. This exercise is driven by the programmatic portion of the Laboratory with supporting functions providing input subsequently. As a result, it is not clear whether the process has considered, in an integrated fashion, the implications of changes in programmatic objectives on achievement of ES&H objectives. It was noted by LANL senior management that in January 1992, LANL intends to conduct a planning process which incorporates the input of all senior management organizations and which integrates programmatic needs with ES&H needs.

In the absence of a comprehensive, top-down strategic planning process (see Finding MF-1), LANL Associate Directors and their staff are conducting human resource planning without an explicit set of priorities to use as guidance. The result is that the human resource planning process tends to take various forms, lacks integration across organizational units, and is often not thoroughly documented. For instance, resource planning for implementation of

the LANL Laboratory Assessment Office (LAO) has not been documented and has been informal. In addition, human resource estimates developed by the support side of LANL (i.e., those organizational units which are indirect cost elements) are driven by what the program side will "bear" or allow. This has led certain LANL support side organizational elements to develop their own internal guidance for assuring that they can determine their resource baseline in the absence of detailed top-down budgeting guidance.

However, the human resource planning process, as it relates to ES&H, is being augmented by the development of an ES&H Self-Assessment Action Plan in response to the Laboratory's Self-Assessment. A total of 25 Key Action Plans are being prepared in response to 17 key findings; each of these action plans will specify activities, milestones, and resources (i.e., budgets and full-time equivalents) necessary to achieve successful implementation and, therefore, resolution of the self-assessment findings.

Conversely, LANL does not have a formal, documented approach for prioritizing or evaluating the risks or trade-offs associated with acquiring ES&H staff versus programmatic staff. This is particularly relevant when there is a budget limitation and, therefore, ES&H staffing requirements may exceed the resources available and allocated. For instance, the Environmental Management Division (EM) views its objectives as five-fold: (1) protecting worker health and safety, (2) complying with applicable state laws and regulations, (3) complying with applicable Federal laws and regulations, (4) complying with DOE Orders, and (5) implementing best management practices. It has been asserted that the current resource allocation for EM staff makes achieving objectives four and five unlikely. A second example is in the area of Occupational Medicine where the LANL staff are required to administer roughly 7,000 physicals annually to LANL and contractor staff. Current staffing only enables approximately 5,000 physicals to be conducted yearly. This situation also extends itself to the subcontractor level where Mason & Hanger has not submitted any of their Computerized Action Reports during the last 3 months even though there have been reportable incidents.

LANL's human resource planning process does not assure integration of ES&H implementation with achievement of programmatic objectives. That is, at this time LANL has not explicitly identified the resource requirements associated with implementation of its ES&H and self-assessment programs and has not, therefore, evaluated the ES&H human resource requirements against the programmatic objectives which they would support. It is noted that the Key Action Plan, "ES&H Resource Allocation Plan," addresses this prioritization issue.

LAAO

Historically, LAAO has not included human resource planning as an extension of mission planning. LAAO had not, until recently, developed a formal documented mission statement from which roles and responsibilities could logically be derived. In addition, there has been some evolution and uncertainty in the relationship between LAAO and AL. It is also not evident that LAAO understood the expanding nature of its ES&H role. The absence of a mission-driven human resource planning process, the existence of organizational roles that were not well understood or communicated, and the inability to project the future course of the Area Office with respect to ES&H responsibilities have combined to create a situation in which staff members have been unsure of their

individual roles and have been overcommitted. Finally, there has also been a significant turnover in key management positions.

It is acknowledged by LAAO that insufficient staffing requires LAAO to depend on AL to a greater degree than is desirable, and this is reflected in planning assumptions which identify the addition of 6 ES&H-related staff in FY 1992 and 19 ES&H-related staff in FY 1993. If authorized, these 25 additional staff represent over 80 percent of the additional staff LAAO is allotted over the next 2 fiscal years. The staff additions also represent an aggregate growth rate of 50 percent over the same period.

Having recognized, in their Self-Assessment, these deficiencies with respect to human resource planning, LAAO has embarked upon a top-down human resource planning process. This process includes the steps of mission definition, identification of roles and responsibilities for individual branches, and development of human resource requirements derived from these roles and responsibilities.

AL

Similar to LAAO, AL has not historically performed human resource planning as an extension of mission planning. That is, there has not been a sequenced and integrated planning activity which is initiated by identifying the Field Office's mission; establishing roles and responsibilities vis-a-vis its Area Offices; determining functional ES&H requirements; and using this understanding of the mission, roles and responsibilities, and functional requirements as a basis for assessing staffing levels projected over some near-term time horizon. For the past several years, AL has conducted a process which uses the AL Management Council to facilitate and coordinate human resource planning for AL and its Area Offices. The Management Council is the body which makes final decisions on the staffing requirements included in AL's Internal Review Budget submission to DOE-Headquarters.

The conclusion that there is an absence of a top-down human resource planning process as described above is supported by the fact that (1) AL recognizes it has had difficulties in clarifying roles, and (2) AL staffing is not sufficient to perform necessary ES&H functions and, as a result, is not keeping pace with emerging ES&H requirements. This is reflected in AL planning which assumes an additional 85 ES&H-related staff will be added at AL in FY 1992 and an additional 85 ES&H-related staff in FY 1993. These 170 additional staff represent almost 50 percent of the additional staff AL is allocated over the next 2 fiscal years.

Having recognized in their Self-Assessment the inherent complexities in deploying staff across six Area Offices, AL has tasked its Management Council to identify opportunities to redistribute existing personnel across the AL system. AL also recognized in their Self-Assessment the need to perform mission-driven human resource planning and, in this instance, has developed ES&H roles and responsibilities, is conducting a comprehensive needs assessment, is in the process of performing a staffing analysis, and will be determining if there are efficiencies to be garnered in the personnel clearance process.

References

•TSA-3: TS.1-1; •TSA-4: OA.2-1.

Self-Assessment

This finding was fully addressed in the LANL Self-Assessment and partially addressed in the LAAO and AL Self-Assessments.

FINDING MF-12 **Los Alamos National Laboratory Environment, Safety, and Health Career Path Planning**

Los Alamos National Laboratory does not have a formal, documented career development program or attendant career ladder explicitly geared towards environment, safety, and health (ES&H) professionals.

Discussion

The presence of clearly articulated career development ladders or programs are the vocational road maps which an organization uses to convey its views to employees regarding the importance of job functions and the potential paths of progression. The existence of these ladders or programs is also crucial for employees to understand the relationships among various organizational entities.

Historically, LANL has utilized one job classification, the Technical Staff Member (TSM) classification, to categorize professional staff. The rationale has been that the Laboratory operated on the concept of multidisciplinary project teams that are created, function, and disband depending on the needs of the research activity. As project teams would come and go, the individual assignments would vary from project to project. The notion of one job classification addressed the inherent difficulty in stratifying staff into numerous job categories given the variety of roles required of staff, and was consistent with the historical singular objective of the Laboratory, that of performing weapons-related research.

It is now evident that the Laboratory is a more complex organization, as is the regulatory and social environment within which it operates. The new mission of the Laboratory demands that programmatic and ES&H objectives be achieved, and the Laboratory has recognized this. What is not evident is the presence of clearly defined or articulated career development programs which support this integrated programmatic and ES&H mission.

Currently, all scientific and engineering staff are classified as TSMs; this includes essentially all ES&H professionals. The definition of TSM is based on the notions of technical credentials and the activity being associated with research and development activities. However, while many of the ES&H professionals are not involved directly with research and development activities, they have developed a great deal of knowledge from their experiences in the work place. Further, certain ES&H functions are relatively new in comparison to classic scientific or engineering disciplines. Individuals in these emerging job areas would, by definition, not have the "technical credentials"; although, they are nonetheless performing the required activities. What the current definition of TSM lacks is a reduced emphasis on the notion of technical credentials and a relieving of the restriction that all TSM jobs must be directly associated with research and development.

There is no clear ES&H career development program or ladder, and, consequently, staff are not able to identify a logical path for progression through the Laboratory. They perceive that ES&H positions are not as highly valued as non-ES&H positions, and do not see any mechanism for transferring back and forth between major functions (i.e., from ES&H functions to scientific or engineering functions). This is exacerbated by the current

moratorium on the transfer of ES&H professionals from either the Health and Safety Division (HS) or the Environmental Management Division (EM) to comparable positions in a research and development organization. While the Tiger Team recognizes the Laboratory's intent with respect to the moratorium is to enable the "ES&H Pilot Program" to proceed under somewhat stable circumstances, this situation reinforces the notion that ES&H staff do not have a full range of career options which they can exercise and provides a potential disincentive for ES&H staff. There is no evidence of a career path which encourages staff to transfer between the ES&H central organizations (i.e., EM, HS, and the ES&H Coordination Center) and the ES&H functions within the research and development (R&D) organizations. Such a career path would promote cross-training of staff and would enhance their value to, and understanding, of the Laboratory.

The absence of a clear ES&H career development program or ladder is complicated by the manner in which salaries and salary increases are established. LANL uses an annual national salary survey of external R&D jobs, performed by an outside consulting firm as required by the terms of their contract with DOE, as input to developing proposed TSM salary increase(s) which are then submitted to AL and to DOE-Headquarters for approval. The survey data used does not include certain job categories, such as ES&H professionals. In view of this, LANL contracted with a separate firm to conduct a survey of ES&H professionals (i.e., managers and staff). This survey data is used as a confirmation check. The results of the survey indicate that in terms of annual salary LANL ES&H management staff are behind the market average by approximately 10 percent, while LANL ES&H non-management staff are ahead of the market by approximately 5 percent. The Laboratory used portions of a third survey to confirm market information on salaries for ES&H technicians. This third survey indicated that ES&H technicians salaries are comparable with the market. It is noted that a LANL Task Force has recognized some of these issues (i.e., TSM definition and ES&H salary survey) and has documented their views in a memorandum issued from M. Stevenson and P. Lyons, dated July 22, 1991. These recommendations are under consideration pending the results of this Tiger Team Assessment.

References

•TSA-3: OA.6-1; •TSA-4: OA.6-2.

Self-Assessment

This finding was not addressed in the LANL Self-Assessment.

FINDING MF-13 **Los Alamos National Laboratory, Los Alamos Area Office, and U.S. Department of Energy Field Office, Albuquerque Environment, Safety, and Health Training**

Los Alamos National Laboratory, Los Alamos Area Office, and Albuquerque environment, safety, and health (ES&H) training is generally fragmented and is not formalized, internally uniform, or comprehensive.

Discussion

An effective training program should ensure that personnel at all levels of the organization are qualified and, if necessary, certified to carry out their assigned duties and responsibilities. An effective training program should be founded on clearly defined goals and objectives and should be conducted with a degree of formality, documentation, validation, and recordkeeping commensurate with its central role in ensuring that only qualified staff are assigned to ES&H activities.

LANL

While an integrated training program does not exist at LANL, elements of effective training programs can be identified, and LANL is pursuing creation of an integrated program. The Laboratory has established a Laboratory Training Office (LTO) whose mission is to establish and maintain a Laboratory-wide training program and to centralize, oversee, and coordinate certain training functions. Implementation planning for the LANL LTO is in the development stage. The document "Laboratory Training Office Implementation Plan" (August 8, 1991) does not contain any milestones, resource requirements, nor any prioritization of activities. However, it is noted that the draft Key Action Plan, "ES&H Training Program," which was prepared in response to the LANL Self-Assessment, addresses many of the aspects associated with implementation.

At present, training is generally not formalized or uniform at LANL. Formal LANL-wide training does not exist in certain key areas such as root cause analysis. LANL-wide training in other key areas, such as substance abuse, is incomplete. For example, LANL first-level supervisors (i.e., Section Leaders) are not trained in substance abuse, because they are not formal managers; however, as first line "in training" supervisors, they are required to function as line managers. Performance appraisal training is not mandatory for new LANL managers. There is no structured program at LANL to evaluate the effectiveness of ES&H training programs or to establish whether staff have received the required level of training.

Training programs do not recognize the need to address broad-based safety training for residents of multi-purpose laboratory facilities. In buildings where there is a variety of operations with particular safety hazards, the occupants are not trained to recognize or to take actions for specific hazards beyond those in their immediate work area. The weakness in this approach is that in the event of a facility emergency, building occupants outside the immediate area of the emergency may not be able to identify the hazard, correctly characterize the situation, and act accordingly.

Several staff members expressed the view that there is a fundamental difference between expanding one's understanding of a subject area through

pursuit of an advanced degree and receiving training in a subject area where one has no prior basis of understanding. In the first instance (i.e., pursuit of an advanced degree), the process is one of extrapolating one's knowledge base, and is often largely an individual exercise. In the latter instance (i.e., receipt of training), the process is one of recognizing that there are areas where "one does not know what one does not know," and it is necessary for a qualified third party to provide that information in a controlled and structured format. This requires a number of conditions including the presence of Training Coordinators who can effectively coordinate and complete the design, development, delivery, and evaluation of training conducted by their organization; a training organization that is integrated into the research and development structure; and the presence of a training culture which embodies in each employee the sense that as members of the Laboratory community they are responsible for recognizing and understanding those hazards that are part of the day-to-day environment. It is not evident that all of these conditions exist with respect to the LANL training program.

LANL training records are currently not consistent in form nor easily accessible nor retrievable. The Laboratory is addressing this issue through development of an Employee Development System (EDS) data base. The EDS is viewed by the Management Subteam as a sound concept because it is a centralized data base (thereby promoting standardization) with decentralized access (thereby allowing line manager utilization).

Finally, training requirements are not transmitted by LANL to its major subcontractors (i.e., Johnson Controls World Services, Inc. (JCI) and Mason & Hanger (M&H)). No LANL audits of JCI's training activities have occurred in the last 2 to 3 years. It is noted, however, that JCI does submit to LANL a number of documents relative to training including an "Annual Training Plan," monthly summary information on training activities, and overall goals and objectives which do involve several related to training. With respect to M&H, although training requirements are not formally transmitted, a training program section is included in the Statement of Work.

The absence of training requirements and the absence of first-hand evidence (i.e., audits) regarding the appropriateness and effectiveness of subcontractor training is of particular importance with respect to janitorial staff and security staff. These individuals essentially have unrestricted access to most areas on the site on a daily basis, and as such, are potentially exposed to the widest array of safety and environmental hazards.

The M&H security force has not, in general, received site-specific training for the facilities where they have either stationary guard stations or roving patrols. There are also no policies or guidance with respect to the potential discharge of firearms or munitions in facilities such as a reactor building or one containing high explosives. The Laboratory is aware of the deficiency and is considering formulation of a precinct system which would allow permanent assignment of security inspectors to a defined geographic area, thereby limiting or bounding the amount of site-specific training required.

In summary, LANL training programs lack the integration, standardization, and uniform implementation which are typical of an effective training program. Many findings in this report indicate the lack of an effective sitewide training program at the Laboratory.

LAAO/AL

At present, LAAO and AL do not have a coordinated ES&H training program or associated plan or manual. This has been complicated by the absence of a needs assessment which would define job-specific requirements. In addition, LAAO and AL do not have a centralized process for development of Individual Development Plans which reflect job requirements. Training requirements are currently determined in a decentralized fashion, and there are no mandatory training requirements.

The need to develop an integrated training program and conduct the attendant training has, at the same time, been reinforced and complicated by the ever-increasing ES&H program requirements placed on the Area and Field Offices. However, no system exists to prioritize execution of ES&H program requirements with implementation of training requirements.

Recognizing these deficiencies, LAAO is planning to develop an integrated training program and a new employee orientation program, and AL has established a Training Council and will be establishing an integrated ES&H training program.

References

•TSA-1: TC.3-1, TC.4-1, TC.4-2, TC.5-1, TC.11-1, EP.3-1, PT.2-1, CS.1-4, and WS.4-2; •TSA-2: OA.8-2, MA.2-2, TC.1-1, TC.1-2, TC.1-3, TC.1-4, TC.2-1, TC.2-2, TC.2-3, TC.2-4, TC.3-1, TC.3-2, TC.3-3, TC.3-4, TC.5-1, TC.6-1, TC.9-1, TC.9-2, TC.10-1, TC.11-1, PT.2-1, RP.1-1, PP.2-1, PP.5-1, MS.1-3; •TSA-3: MA.2-2, TC.1-1, TC.1-2, TC.4-1, TC.4-2, TC.10-1, AX.6-1, TS.1-2, PT.1-2, RP.1-1, and RP.8-2; •TSA-4: TC.1-1, TC.1-2, TC.4-1, TC.4-2, TC.4-3, TC.4-5, TC.5-1, TC.5-2, TC.6-1, TC.7-1, TC.8-1, TC.9-1, TC.10-1, EP.2-2, EP.3-1, PT.2-1, PT.4-2, SS.4-1; SS.4-2, and SS.4-3; •NEPA/CF-3, A/CF-6, and WM/CF-2.

Self-Assessment

This finding was addressed in the LANL, LAAO, and AL Self-Assessments.

FINDING MF-14 **Los Alamos National Laboratory Staff Recruitment Programs**

Los Alamos National Laboratory does not have an effective program for external recruitment of environment, safety, and health (ES&H) professionals.

Discussion

Effective staff recruitment is crucial for an organization to achieve continuity as well as to efficiently adjust to changing external forces. First, effective staff recruitment is necessary for an organization to expeditiously replace those skills which are lost through attrition. Second, effective staff recruitment can invigorate an organization with new perspectives, ideas, and concepts which contribute to organizational growth. Third, effective staff recruitment is one mechanism (i.e., in addition to training) that an organization uses to develop new skills or disciplines which are required by changes in laws or regulations.

The Laboratory, until recently, focused recruiting of ES&H staff on internal candidates. This was a conscious decision in recognition of the instability of a variety of Laboratory programs and, therefore, reflected a desire to minimize staff reductions. There are several limitations to this approach:

- Information developed during Management Subteam interviews indicated that some staff who transferred from non-ES&H functions to ES&H functions, used the transfer as a vehicle to "buy time" while they were looking for another position in the research side of the Laboratory which more closely suited their background.

- The time required to execute an internal transfer involving advertising of the positions typically takes several months, which complicates the process of human resource planning. This duration has been documented in an internal study (see "Time Spent Study", prepared by PS-1). It is noted that in the case of programmatic and/or funding redirection requiring staff relocations, internal transfers can be effected more quickly.

- Many of the staff who transferred were not ES&H professionals; hence, a significant amount of time is required for these staff members to develop a basic understanding of ES&H principles. Similarly, this "learning curve" requires an investment of ES&H professional time to ensure this proficiency is developed.

- Perhaps most importantly, ES&H is a rapidly changing arena with a significant amount of expertise in the private sector. It is not clear that the Laboratory has pursued the identification of qualified ES&H candidates, whether internal or external, with vigor. By not aggressively pursuing the external market for ES&H staff members, the Laboratory does not benefit from external state-of-the-art ES&H expertise which is crucial to developing a credible and qualified staff.

It is not evident that external staff recruitment has been performed in a coordinated fashion. It is not apparent that the Laboratory has either identified, from a LANL-wide perspective, overall ES&H staffing needs or has

prioritized those ES&H functions where staff shortages are the most crucial. In addition, while the recruitment of such staff is central to achieving the Laboratory's ES&H objectives, it does not appear that LANL has utilized certain human resource organizations (e.g., Human Resources Division and Personnel Services Division) to centralize, focus, and assist in the external search for ES&H talent.

As an example of where recruiting is ineffective, the Laboratory Assessment Office advertised a position for which 24 individuals applied. Four of the five individuals identified as potential candidates were from outside the Laboratory. By the time offer(s) were extended, candidates 1 and 2 had moved on to other jobs, candidates 3 and 4 were in the process of taking other jobs, and candidate 5 had made a decision to return to school. There are other similar examples. It is noted that the Laboratory intends to address several of these issues and has documented their intent and approach in the draft Action Plan, "Integrated Staffing Needs."

In summary, the absence of centralization of recruiting and the need to identify efficiencies in the hiring process is resulting in a number of unfilled ES&H and quality assurance staff positions.

Self-Assessment

This finding was not addressed in the LANL Self-Assessment.

FINDING MF-15 **Los Alamos National Laboratory Performance Expectations and Appraisals**

The Los Alamos National Laboratory performance appraisal process is not being uniformly or consistently applied to assist in motivating environment, safety, and health (ES&H) excellence.

Discussion

Individual performance is the foundation of ES&H excellence. Specific and individual ES&H goals, objectives, and performance measures for all employees is critical to ensuring an effective and responsive ES&H culture.

The central importance of individual ES&H excellence has generally not been expressed throughout LANL in personnel position descriptions or individual performance appraisals.

The Laboratory combines its position descriptions with the performance appraisal information in the form of a single document. The Tiger Team requested, and was provided with, a random sample of position description/performance appraisal documentation. In general, the documents exhibited the presence of ES&H elements as performance standards, and there was a notable increase in the presence of ES&H elements in the last year or two as compared with previous years. Conversely, the ES&H elements were not universally measurable; that is, they were frequently of such a general nature that a judgment could be clearly made as to whether a staff member satisfied the performance standard. In addition, these elements typically were constructed in "pass-fail" language so that it would not be obvious if a staff member exceeded the requirements of the performance standard.

LANL has not been totally effective in completing performance appraisals. In 1991 (the performance appraisal period ended in August of this year), 44 percent of all LANL staff received completed performance appraisals. Only 7 percent of staff in the Health and Safety Division and the Environmental Management Division received completed performance appraisals. Several issues are of concern in addition to the obvious one of the limited completion rate. First, in the absence of an ongoing dialogue between management and staff regarding performance, the lack of an annual performance appraisal indicates to employees that management is not interested in their performance. Second, because the position description is linked with the performance appraisal documentation, an uncompleted performance appraisal may leave the employee without a documented set of responsibilities for the coming year. Third, the process used to assign salary increases would be conducted in the absence of a performance appraisal. This observation is supported by a June 1991 internal study of the LANL performance appraisal system which identified the lack of connection between the performance appraisal process and the salary program as an issue. The low completion rate for this past year would suggest that there is no mechanism which enforces the Laboratory policy that performance appraisals be completed annually. For instance, there are no requirements identifying timely completion of subordinates' performance appraisals as a performance standard in the appraising manager's performance appraisal.

Another weakness in the performance appraisal system is that training requirements, as identified in the staff training plans, have not been linked with the performance appraisal process. Specifically, job-specific training

is not explicitly identified as a goal in the Development Plan portion of the Performance Appraisal. It is noted that when the Employee Development System (EDS) is fully functional, this linkage may be achieved.

A final element related to the performance appraisal process is the absence of incentives to encourage and reward positive ES&H behavior. For instance, while there are programs to reward recognition in the scientific, engineering, and administrative areas, such as Distinguished Performance Awards, there is not an equivalent Laboratory-wide program to reward exemplary actions with respect to ES&H, and such incentives are not in evidence in employee performance appraisal documentation as performance standards within the ES&H job element. It is noted, however, that there is a recently approved (i.e., October 7, 1991) awards program to encourage waste minimization during the conduct of research activities. Absence of a Laboratory-wide ES&H incentives program tends to establish or reinforce perceptions regarding the importance of ES&H versus programmatic objectives.

References

•TSA-1: OA.6-1; •TSA-2: OA.6-2 and TS.1-2; •TSA-4: OA.6-1.

Self-Assessment

This finding was partially addressed in the LANL Self-Assessment.

FINDING MF-16 Los Alamos National Laboratory Employee Relations Programs

Los Alamos National Laboratory employee relations do not foster full and effective implementation of environment, safety, and health (ES&H) activities.

Discussion

A major purpose of an employee relations program is to ensure that ES&H issues of concern to employees are addressed. Such issues should be addressed in a timely and comprehensive manner, mechanisms to address ES&H issues of concern should be available, and employees should be confident in such mechanisms.

LANL has a comprehensive program of employee services. These include counseling for a variety of physical and emotional problems and for resolving disputes or grievances between staff and management. LANL has also initiated an ES&H Hotline Program and a Deficiency Ticket Program, whereby employees can anonymously forward comments and concerns to LANL ES&H Coordination Center and upper level management for response or corrective action. It is the Tiger Team's view that these programs, as structured, are fair and equitable in terms of balancing the rights of the Laboratory and those of the individual and emphasize the concept of mediation to resolve differences.

In practice, however, evidence suggests that the LANL counseling services, grievance process, and Hotline Program are utilized less frequently than they might otherwise be. In the case of counseling services, staff are apparently not confident in the confidentiality of participation. The staff's reluctance to participate in counseling derives from the belief that records documenting involvement in these services are accessible through a security search or review conducted by DOE or other government agencies, during which employees are required to sign a form granting release of all relevant information. In the case of the grievance process, there are fears of reprisals; although, it is noted that the Laboratory has procedures whereby staff members can anonymously raise issues of this nature. With respect to the LANL ES&H Hotline Program this mechanism has not been used as extensively and successfully as the Deficiency Ticket Program.

There are a number of high-risk operations conducted at the Laboratory which naturally rely on human interactions for carrying out the programmatic mission and achieving the associated goals. One way of fostering a safe work place is through input of those who are familiar with the day-to-day, hands-on processes. However, it is evident that many employees do not feel free to discuss the problems and difficulties in the job with an immediate supervisor without job security concerns.

Through the Tiger Team Hotline and interviews, some staff voluntarily, and in an unsolicited manner, stated a reluctance to voice ES&H concerns for fear of managerial retribution. Of the Tiger Team Hotline calls, a significant number of calls were anonymous (i.e., 104), a few of which specifically mentioned the fear of retribution (i.e., 9). Perceptions exist by some staff that negative/disciplinary action will occur as a consequence of raising their concerns. During the Tiger Team interviews, there were also a number of unsolicited concerns expressed relating to a fear of managerial retribution if the occurrence of the interview were to be known by management. This belief,

whether real or perceived, hinders the commitment to fostering ES&H excellence.

While it is difficult for the Tiger Team to categorically substantiate or refute the allegations made by certain staff, it is evident that the belief exists regarding the absence of confidentiality of counseling records, fear of reprisals for utilizing the grievance process, and reluctance to directly raise ES&H-related issues to management. For programs which are as sensitive as these, the mere perception of a lack of staff confidence can render these services ineffectual.

Self-Assessment

This finding was not addressed in the LANL Self-Assessment.

FINDING MF-17 **Department of Energy Field Office, Albuquerque Environment, Safety, and Health Oversight**

The lack of clear environment, safety, and health (ES&H) directions to Los Alamos National Laboratory and the failure of the U.S. Department of Energy Field Office, Albuquerque ES&H oversight program to fully identify oversight deficiencies in the Los Alamos National Laboratory Internal Review System have been significant factors in allowing the same deficiencies to exist for extended periods of time.

Discussion

AL did not require LANL to establish a formally structured, sitewide independent safety review and appraisal system following the issuance of DOE 5482.1B. In addition, AL's reviews have not identified some major deficiencies in the LANL appraisal program. For example, AL's reviews have not identified that the LANL internal review and appraisal program has only been fully applied to nuclear reactors and nuclear criticality activities. Other nuclear facilities and non-nuclear facilities have not had adequate coverage.

AL's facility appraisals and management appraisals have not adequately evaluated LANL's performance of triennial appraisals. Triennial appraisals have been limited to reactor and nuclear criticality activities. Furthermore, these appraisals have been performed by persons who are a part of the system/activity being appraised, resulting in questions regarding the adequacy of appraiser independence.

AL uses the technical safety appraisal performance criteria as a guide in performing appraisals of nuclear facilities. The criteria includes the independent review requirement. However, AL has not identified deficiencies in the LANL performance of annual and triennial appraisals. Therefore, AL has not effectively implemented the DOE requirements which direct that appraisals and reviews be performed by persons not involved in the activity being reviewed.

The DOE-Headquarters (HQ) oversight program is still in the development stage. DOE-HQ task forces are working to establish guidelines for Memoranda of Assessment (MOAs) as well as instructions needed for other important activities such as Safety Analysis Report (SAR) preparation. Tri-party MOAs between the DOE Ofice of Defense Programs (DP) and AL and each of the Program Secretarial Officers (PSOs) (i.e., Environmental Restoration and Waste Management (EM), Nuclear Energy (NE), and Energy Research (ER)) will be an extension of the controlling MOA between DP and AL. The draft MOA between DP and AL is presently at AL for review.

References

•TSA-1: OA.1-2 and CS.1-5; •TSA-2: PT.11-2; TSA-3: OA.1-2 and PT.11-1; •TSA-4: QV.1-4, OA.1-1, and PT.3-5; •TCM/CF-9.

Self-Assessment

This finding was partially identified in the AL Self-Assessment.

FINDING MF-18 **Los Alamos Area Office Environment, Safety, and Health Oversight**

Los Alamos Area Office does not have a formal oversight program to ensure that deficiencies in the Los Alamos National Laboratory Environment, Safety, and Health (ES&H) Program are promptly identified and to prevent deficiencies from recurring.

Discussion

LAAO ES&H oversight responsibilities are not clearly defined. LAAO has not routinely reviewed LANL appraisal and inspection reports as part of its oversight role. Some deficiencies identified by the Tiger Team in the LANL oversight program, such as the inadequacy of the annual and triennial appraisals, required minimal effort to detect. Review of appraisal reports alone could potentially have revealed these deficiencies.

The LAAO facility representative oversight charter and associated training program do not include periodic examination of the implementation of LANL's formalized institutional ES&H program at the facility level. Neither does it require the evaluation of LANL's internal facility's appraisals to ensure that a comprehensive, institutionalized program is working. The charter does not include assuring that LANL's oversight system detects deficiencies. Many deficiencies will be remedied if there are effective laboratory line oversight and independent line oversight programs.

References

•TSA-4: PT.3-6; •TCM/CF-9.

Self-Assessment

This finding was not identified in the LAAO Self-Assessment.

FINDING MF-19 **Los Alamos National Laboratory Director's Office Environment, Safety, and Health Oversight Program**

Los Alamos National Laboratory has not formally established a structured Laboratory-wide independent safety review and appraisal system and has not performed sitewide safety reviews and appraisals of all activities.

Discussion

Contractor Independent Safety Review and Appraisal System

LANL has not established and implemented a well defined, laboratory-wide, structured contractors independent safety review and appraisal system. The present LANL system is not structured, comprehensive, integrated, or unified. Instead, fragments of the LANL environment, safety, and health (ES&H) oversight system are located in several functions throughout the Laboratory. The various elements of the LANL safety review and appraisal system have accumulated over the years, starting with reactor oversight in the early 1960s. The fragmentation of the LANL system makes it difficult to audit all of the elements to determine compliance without expending an unreasonable amount of time.

LANL is developing a plan which will include additional elements of a comprehensive contractor internal safety review and appraisal system. The plan will be developed in three phases (i.e., policy, program, and procedures). The plan does not clearly indicate the levels in the organization at which each of these three phases will be developed and controlled. At this point in the development, it is too early to determine whether the establishment of a comprehensive internal ES&H review and appraisal program is taking place. Discussion with representatives of the Central Policy Office (CPO) and the Deputy Laboratory Director disclosed that all three phases of the three-step plan will be developed by the CPO and issued from the Laboratory Director's Office. If this plan is implemented, it appears that some major deficiencies in the LANL ES&H program will be eliminated. That is, specific directions will be provided to the directorates under which they will operate. This should provide consistency and uniformity in the application of the DOE ES&H requirements throughout the Laboratory. However, it does not appear that the currently proposed plan will cover all of the requirements of a contractor independent safety review and appraisal system or the triennial appraisal program.

LANL's Internal Independent Safety Review Program

Except for reactors and nuclear criticality activities, the technical safety reviews by committees or by other means have not been uniformly well defined and formally documented. An example of deficiencies that can result from the lack of a formal safety review system is that safety reviews are not always performed on proposed changes to the security system. Requirements for safety reviews are not sufficiently clear such that all administrative practices and facility changes which could affect safety always get independent review. Presently, with a few exceptions, reviews are only made on changes to the security system costing more than $150,000; these reviews are usually done by line management. The security ES&H representative stated that he is not normally asked to review these changes.

LANL Independent Internal Reviews of Safety Analysis Reports

The structure and review requirements of the sitewide Safety Analysis Report (SAR) review system has not been approved at the Directorate level to (1) ensure continued implementation, and (2) formally incorporate this into the Laboratory-wide ES&H oversight program. To date, only the Group Leader has approved the program. The Group Leader has established a SAR preparation, review, and coordination system under the Associate Director for Operations' (ADO) direction that has been well thought out and includes independent safety review by technically competent individuals. High priority facilities and operations requiring SAR or Safety Analysis (SA) have been identified. SA documentation requirements of all facilities have been established with the status of each kept current. The SAR preparation and review system uses a team leader approach. The team leader is assigned at the beginning of a project and he or she will see the project to completion. The system is well documented and provides another element in the LANL sitewide ES&H oversight program.

Annual Appraisals

The LANL Reactor Safety Committee's annual summary report to the Director does not satisfy all of the requirements of DOE 5480.5 and DOE 5480.6. The summary reports do not fully satisfy the requirement for once-a-year comprehensive examination of each facility's operation with special emphasis on the specific topics identified in the DOE Orders. The appraisal is not performed by a committee or persons who are not part of the activities being appraised. The Reactor Safety Committee members are required to be involved occasionally in specific reviews of safety items during the year. Therefore, the summary report is prepared by the same committee whose members may have made decisions related to the facilities appraised. In addition, the summary reports produced by the committee are generally informational only and normally contain no recommendations for action by management.

Appraisals Sitewide of LANL Activities

LANL is developing a much needed appraisal program. However, this program will not ensure that effective, independent internal appraisals will be made of all activities to reveal deficiencies in the LANL ES&H program. Although LANL's plan for appraisals under the Laboratory Assessment Office (LAO) implies that this organization will satisfy the requirement for sitewide appraisal of all activities, the details of the program plan submitted to AL for approval provides otherwise. Restrictions are placed upon the LAO functions which prevent it from fulfilling all of the requirements of the appraisal portion of the independent safety review and appraisal system. The planned program could be the beginning of an integrated, comprehensive, sitewide system; however, the following limits result in this being another fragment of a comprehensive system: (1) LAO only covers appraisals; (2) reactors and nuclear criticality activities are exempted from LAO appraisals; (3) LAO does not cover oversight activities pertaining to adequacy of safety reviews, SAR requirements, inspections, and audits; (4) the proposed organization leaves some questions as to the role of quality assurance; and (5) LAO only provides appraisals of nuclear facilities other than reactors and criticality activities. The planned approach to reorganizing does not address the problem of fragmenting the LANL oversight program.

References

•MF-7; MF-8; MF-15; MF-27; •TSA-1: CS.1-3, TC.1-1, TC.5-1, AX.5-2, and PT.1-1; •TSA-2: FR.1-1, FR.2-3, FR.3-2, and FR.4-1; TSA-3: PT.1-2, and EA.2-1; •TSA-4: OA.1-1, PT.1-1, PT.1-2, PT.3-3, FR.1-1, FR.1-2, FR.4-1, FR.4-2, FR.5-1, and RP.1-1; •TCM/CF-9, TCM/CF-13, NEPA/CF-5, WM/CF-19, IWS/CF-8, QA/CF-7, QA/CF-8, and QA/CF-18.

Self-Assessment

This finding was partially identified in the LANL Self-Assessment (see Findings FR.1-1, FR.5-1, and MG.3-1).

FINDING MF-20 Los Alamos National Laboratory Triennial Appraisals

Triennial appraisals are not performed of the sitewide Los Alamos Oversight System as required by DOE 5482.1B, and triennial appraisals made on reactor and criticality activities do not satisfy the requirement that they be made by personnel not involved in the activities being appraised.

Discussion

LANL is not making effective use of the triennial appraisals, which are required by DOE 5482.1B for the specific purpose of identifying deficiencies in the sitewide internal safety review and appraisal system. The triennial reviews as presently performed do not satisfy DOE Orders and Secretary of Energy Notice (SEN) requirements that independent reviews are to be made by personnel not involved in the activities being reviewed. Triennial appraisals are also limited to reactor and criticality activities; therefore, other nuclear facilities and non-nuclear facilities have not been appraised.

Triennial appraisals are conducted by the Laboratory ES&H Council which reports to the Laboratory Director's Office. The appraisal consists of the ES&H Council interviewing the reactor safety committee members and members of other safety committees once every 3 years and summarizing the results of the meetings with the committees to yield the report. Since the ES&H Council is composed of line managers of the systems under review, objectivity and independence are questionable. This does not satisfy the requirements of DOE 5480.5, DOE 5480.6, and DOE 5482.1B that contractors have independent reviews made of their sitewide safety review and appraisal system triennially. In addition, the written reports are not comprehensive. The Council does not appraise the sitewide activities, and the ES&H Council does not usually visit the facility during the appraisal. However, the Council regularly visits major facilities as part of its oversight responsibilities. Hence, the Council is part of the oversight system that is supposed to be reviewed during the triennial appraisal.

References

•TSA-1: FR.5-1; •TSA-2: FR.5-1; •TSA-3: FR.5-1; •TSA-4: FR.5-1; •TCM/CF-9, NEPA/CF-5, and QA/CF-8.

Self-Assessment

This finding was partially identified in the LANL Self-Assessment (see Finding FR.5-1).

FINDING MF-21 **Los Alamos National Laboratory Directorates Environment, Safety, and Health Oversight**

Most Los Alamos National Laboratory (LANL) Directorates have not formalized the requirements for environment, safety, and health (ES&H) oversight programs for their line organizations to ensure compliance with Department of Energy and LANL ES&H requirements.

Discussion

Implementation of Requirements

LANL stresses the importance of line authority and responsibility; however; in practice the line organizations have relied on ES&H support groups, appraisers, and oversight activities outside the line organizations to ensure compliance rather than having a formal in-house oversight program to carry out this function. ES&H programs have often been initiated at the lowest level of line management with little direction or oversight by upper levels of line management.

Since each Associate Director (AD) has different programs, facilities, and requirements, it is important that each AD develop and implement a formal ES&H program adapted to specific needs within the framework of the Director's policies. All ADs have not developed formal plans which establish ES&H oversight programs as directed in the March 6, 1991, memorandum from the Laboratory Director's Office. This memorandum gave instructions to senior management on "formality of operations." It requires ADs to "take over the ES&H assessment responsibility" for their Directorates "and establish a line management monitoring and reporting process to ensure that ES&H concerns based on" 16 elements identified by the Director's Office "are being satisfactorily tracked and addressed."

Most ADs have not developed formal systems for ensuring compliance with DOE and the Laboratory Director's requirements. The AD's policies are often only general plans such as requiring the line managers to ensure that ES&H programs are carried out. Little evidence was found by the Tiger Team that the ADs have begun to establish specific oversight programs other than walk-throughs. Not enough formal evidence exists to perform a meaningful audit of compliance activities by the line.

Line ES&H Oversight Organization

The LANL Director's plan issued on July 29, 1991, was intended to answer the need expressed by ES&H personnel assigned to AD line organizations to "tell us what you want us to do, and we will do it." Its intent was also to establish some formality in the ES&H program. No evidence was found that would indicate that either of these goals has been met. Implementation has been slow and many ES&H personnel are still not completely clear on their roles and responsibilities. ES&H personnel in the line have different functions for each AD. This gave the Tiger Team the impression that no formal, uniform, consistent approach is required. Each AD is continuing the past practice of independently developing his/her own organization.

Independence is diminished within some Directorates, divisions, and groups by having ES&H committees chaired by the line manager to whom the committee

reports. Committees in other Directorates are chaired by AD ES&H staff members giving them a degree of independence from the line. The ES&H coordinators in some Directorates are mostly information gatherers and advisors to line management on policy-making issues. Minutes of meetings and discussions with ES&H personnel confirm this conclusion.

Not all of the line organizations' ES&H coordinator committee charters and ES&H coordinator positions have been formally approved. The positions have not been formally or adequately defined in all cases. Most of the committee charters, which have been written by the ES&H coordinators, do not stress comprehensive oversight. Some ES&H representatives feel that oversight is one of their functions; these representatives have been told that they are charged with seeing that no violations occur. However, there is no evidence that compliance is part of their role.

The Associate Director for Research and the Associate Director for Defense Research and Applications have established a joint ES&H committee for the TA-53 area. The committee is composed of expert ES&H personnel not in the operating line. This appears to be a very positive action; however, it is not clear from the charter what the joint committee covering TA-53 will accomplish. Management stated that the committee was formed to facilitate communications.

Exchange of Oversight Information

Horizontal interfaces among the different Directorates by which an exchange of information on ES&H concerns is accomplished are not well defined. There are no formal plans or requirements at the AD, division, or Group Leader levels that ensures flow of information either within the Directorate or between Directorates regarding ES&H information collected by those personnel or organizations responsible for oversight. All of the division level ES&H coordinators within one Directorate established their own committee for this purpose. The responsible AD has not formalized this committee, but allows it to function. There is some horizontal flow of information at the AD level through the ES&H Council, but exchange of ES&H information between organizations is not required.

References

•MF-10; •TSA-1: TC.1-1, TC.5-1, AX.5-2, and FR.2-1; •TSA-3: OA.1-1, OA.2-3, OA.5-1, and QV.1-1; •TSA-4: WV.1-1, QV.1-2, OA.1-6, FR.2-1, and PP.1-1; •QA/CF-7 and QA/CF-12.

Self-Assessment

This finding was partially identified in the LANL Self-Assessment (see Findings QV.2-1, MG.2-1, and MG.2-2).

FINDING MF-22 **Los Alamos Area Office Contract Administration and Compliance**

The Los Alamos Area Office has not fully observed or enforced the provisions of the Department of Energy prime contract with the University of California.

Discussion

The prime contract, W-7405-ENG-36, between DOE and the University of California contains some cumbersome provisions for providing required environment, safety, and health (ES&H) policy guidance, procedures, and regulations to the Laboratory. Clause 29 of the contract specifies that all safety and health regulations and requirements will be communicated to the University. Clause 30, related to nuclear safety, requires University compliance with applicable regulations and requirements as it is notified in writing by the Contracting Officer. By definition in the contract, the "University" means the Regents of the University of California.

Until recently, DOE policies, regulations, and procedures related to ES&H have either not been formally communicated to the University at all or were not provided according to the specified terms and conditions set forth in the contract. Although LAAO has not literally complied with the provisions of the contract, it has not proven to be a deterrent in the application and implementation of DOE-directed ES&H policies, procedures, and regulations by the Laboratory. The Laboratory has generally proceeded with the implementation of applicable DOE Orders on the basis of advance copies or those which have been provided informally by the Area Office. Although there have not been any negative consequences resulting from the failure of LAAO to comply with the literal provisions of the contract, such practices could be called into question in the event of a dispute.

In any event, the concept of formality of operations would require that the parties should either comply with the provisions of the contract or they should be modified to provide a more flexible, but still formal, means of identifying those DOE policies, regulations, and procedures which must be applied by the Laboratory.

It was also observed that Clause 30 of the contract requires that technical specifications for designated nuclear facilities be submitted to the Contracting Officer for approval. It appears that the Laboratory has complied with these contractual requirements even though approvals from the Contracting Officer have been slow in coming in many cases.

Self-Assessment

These findings and observations were partially addressed in the LAAO Self-Assessment.

FINDING MF-23 Los Alamos Area Office Contract with Los Alamos County Fire Department

The Los Alamos Area Office has not fully enforced the requirements and provisions set forth in the Department of Energy (DOE) prime contract with Los Alamos County for the provision of fire protection services to the Laboratory and other DOE-owned facilities.

Discussion

Based upon the findings of the TSA subteams which are fully supported by previous studies and evaluations initiated by AL, the Tiger Team concluded the following:

- The county has not yet developed a capability which fully complies with the National Fire Protection Association (NFPA) standards cited in the contract. Therefore, DOE is not receiving the full range of fire protection services and support specified in the contract.

- DOE is relying upon a Fire Protection Resource to protect personnel, the public, and vital assets which may not be fully capable of responding in a totally effective and appropriate manner.

The Fire Protection and Emergency Medical and Rescue Services required to protect and support DOE-owned facilities, as well as the community within Los Alamos County, were previously managed and operated by DOE as a direct Federal function, staffed by DOE employees, until September 24, 1989. On February 9, 1988, DOE entered into a contract with Los Alamos County to provide fire protection as well as emergency medical and rescue services. This is a two-phase contract designed to provide a transition period of 3 months followed by the transfer of full operational responsibility to the County. Due to a number of extenuating circumstances, the actual transfer of the Fire Department and related functions was not completed until September 24, 1989. A new five-year cost-sharing contract is currently being negotiated and is expected to become effective early in calendar year 1992. According to the proposal submitted by the County the DOE share of the costs of the operations will to be on the order of $55 million for the term of the contract.

DOE has adopted the standards of the NFPA for DOE-sponsored or -funded fire protection services. Although this policy is reflected in the contract, the specific applicable standards are not currently cited in total. There is reason to believe that the capabilities and operation of the Fire Department did not fully comply with applicable NFPA standards at the time it was transferred to the County. Although there continue to be some extenuating circumstances, progress has been made to achieve compliance. However, as of the date of the Tiger Team reviews, the Fire Department does not meet the NFPA standards specified in the contract. The TSA subteams cited numerous significant deficiencies, the most serious of which is the absence of pre-fire plans which set forth the characteristics of each major facility at the Laboratory, as well as other DOE-owned facilities, the hazards which might be encountered in dealing with a structural or internal fire, and the specific techniques to be employed to mitigate such hazards. Due to the absence of such pre-fire plans, site-specific training and indoctrination for the fire

fighters has been minimal or non-existent. A major fire in a reactor facility or one which contains nuclear materials, high explosives, or chemical processes requires special expertise and training in order to minimize the potential hazards to employees, the public, and the fire fighters. At the present time, it is not clear that the Fire Department is fully prepared and trained to deal with this type of response.

With only a few exceptions, it appears that the Fire Department is well equipped and staffed to provide the type and quality of fire protection required by the provisions of the contract. If immediate attention is focused on pre-planning and training, as well as other deficiencies cited in the TSA subteam reports, they appear to have the potential to become one of the premier fire departments within the state.

The observations and findings of the Tiger Team are consistent with a special study and report dated May 2, 1991, which was completed under the direction of AL. It is understood that similar findings were generated by earlier studies and evaluations conducted by external organizations including DOE-Headquarters. Although the problems and concerns appear to be well understood, historically there does not seem to be any sense of urgency on the part of the county or the Area Office to take immediate and effective remedial action.

In summary, the mitigating circumstances which were encountered during the transition period and which still exist to some extent, are recognized and acknowledged by the Tiger Team, as well as the progress which has been made to date. It is also recognized that many of the deficiencies which need to be corrected cannot be accomplished in the near term.

Reference

•TSA-1: TC.4-1.

Self-Assessment

The Tiger Team findings and observations were partially addressed in the LAAO Self-Assessment. The Los Alamos County Fire Department completed a number of self-assessment questionnaires which do not conform with DOE policies and directions for a self-assessment plan or program. Moreover, they did not effectively address the critical issues cited by the Tiger Team.

FINDING MF-24 **Los Alamos National Laboratory Subcontracts with Johnson Controls and Mason & Hanger**

The Los Alamos National Laboratory subcontracts with Johnson Controls World Services, Inc. (JCI) and Mason & Hanger (M&H) do not contain provisions which expressly provide the Laboratory with the right to stop work.

Discussion

The Laboratory subcontracts with JCI and M&H appropriately reflect most of the required ES&H clauses. The "General Safety and Accident" clause is a slightly modified version of the standard article set forth in DEAR 970.5204-2. This modified version, which is permissible under the provisions of the prime contract, includes most of the essential elements with the exception of a provision which expressly provides the Laboratory with the contractual right to stop work for safety considerations.

There is a separate Stop Work Clause in the contract. However, it seems clear that it was never intended to deal with immediate stoppages stemming from safety concerns since it requires written notification from the Contracting Officer.

It appears that the absence of a safety-related stop work clause in the subcontract has not been a deterrent to the exercise of such authority by line management within the Laboratory when it is deemed necessary. Similarly, JCI and M&H have apparently been cooperative and responsive to such directions. Therefore, the omission has not resulted in any negative impact. However, best management practices dictate that a more specific provision be included in the subcontract that provides for work stoppages related to safety and health concerns.

Self-Assessment

This finding was not addressed in the LANL Self-Assessment.

FINDING MF-25 **Los Alamos National Laboratory Cost Plus Award Fee Subcontracts**

The Los Alamos National Laboratory cost plus award fee subcontracts with Johnson Controls World Services, Inc. (JCI) and Mason & Hanger (M&H) do not totally document the directions of the Secretary of Energy with respect to assuring that environment, safety, and health (ES&H) factors constitute more than 50 percent of the available award fee.

Discussion

Although the Laboratory subcontracts with JCI and M&H only reflect a factor of 15 percent for ES&H performance, the Laboratory asserts that ES&H factors are also embedded in each of the other functional categories and are evaluated and rated by appropriate line or staff organizations. The composite effect of these ratings, coupled with the 15 percent factor reflected in the contract, results in a value in excess of 50 percent of the available award fee which is consistent with the spirit and intent of the Secretarial Policies.

The Tiger Team is willing to accept this assertion as representing the intentions of Laboratory management even though it does not appear to be a well-documented policy. It appears that while the Secretary of Energy's policies do not literally apply to subcontracts, the Laboratory has chosen to apply greater than 50 percent emphasis for ES&H issues to award fee determinations for the JCI and M&H subcontracts to be consistent with the Secretary's policies. However, it would likely be more effective and provide an even greater incentive to the subcontractor if that policy was either reflected in the subcontract or a formal plan for award fee evaluations. Moreover, interviews with some of the line organizations suggest that such policies are not being consistently applied in the individual periodic performance evaluations. If there has been a significant incident related to ES&H during the evaluation period, the consequences are considered and evaluated by the line organizations. However, they concede that the day-to-day application of ES&H requirements and regulations by the subcontractors are not considered in their evaluations.

References

•TSA-1: PP.3-2; •TSA-4: OA.1-2.

Self-Assessment

This finding was not addressed in the LANL Self Assessment.

FINDING MF-26 **Los Alamos National Laboratory Environment, Safety, and Health Staff Augmentation**

Los Alamos National Laboratory subcontract personnel are used extensively to augment environment, safety, and health (ES&H) staff without the benefit of a documented determination which includes comparison of subcontracting versus direct hire.

Discussion

It is not uncommon for a LANL organization to augment their full-time equivalent (FTE) ceiling by utilizing personnel hired by the standing subcontract labor organizations including those with task type subcontracts. To accomplish their ES&H responsibilities, some of these individuals or groups of individuals are in long-term assignments that, under other circumstances, would be filled by Laboratory employees. This tends to create a "shadow organization" that obscures the total commitment of manpower resources. Moreover, such decisions are not supported by a documented comparison to determine the most effective method of staff augmentation. It is recognized that there are circumstances where it is indeed more economical or otherwise sensible to utilize outside resources for specific, short-term tasks as opposed to hiring permanent, full-time employees. There is a formal policy statement covering contract labor entitled Contract Labor Policy and Procedure, dated November 2, 1990, but it contains no provisions for comparative evaluations, nor does it contain a precise definition for the key term "temporary." Formality of Operations concepts require documentation of any significant decisions and best management practices require consideration of all pertinent factors (e.g., comparative <u>incremental</u> costs, duration of assignments, special expertise considerations, and significance of work to be performed relative to mission).

Self-Assessment

This finding was not addressed in the Laboratory Self Assessment.

FINDING MF-27 **Los Alamos National Laboratory Non-Department of Energy Funded Work and Cooperative Research and Development Agreements**

The formal Los Alamos National Laboratory system to ensure that non-Department of Energy funded work proposals and Cooperative Research and Development Agreements receive appropriate environment, safety and health (ES&H) review is not thorough or totally effective.

Discussion

New projects and work proposed by or for a DOE laboratory should be reviewed at the earliest practical time to determine if the proposed work plan elicits any ES&H concerns which need to be resolved. This applies to DOE-sponsored projects as well as work for non-DOE organizations. Issues such as whether the work involves hazardous or dangerous materials or activities, requires special permits, or may place a financial burden upon DOE for later remediation of the facility need to be addressed before a commitment is made to perform the work. Likewise, the appropriate level of National Environmental Policy Act (NEPA) documentation must be completed early in the process.

LANL performs work for non-DOE organizations which is categorized as Work-For-Others (WFO) or reimbursable programs. These programs utilize the Laboratory's unique capabilities, often enhance the Laboratory's technology base capabilities, support DOE agreements with various Federal and non-Federal organizations, and are consistent with recent legislation making technology transfer a mission of Federal laboratories. Reimbursable work approximates one-fourth of LANL's operating funds. The Cooperative Research and Development Agreement (CRADA) is an agreement under which the DOE laboratory performs cooperative research on a subject of mutual interest with a non-Federal partner. CRADAs are similar to WFO with the exception that DOE funds are used to supplement the partner's contribution. LANL currently has two active CRADAs.

DOE 4300.2A, Change 2, dated March 27, 1991, added an Attachment 3 that requires consideration of all ES&H issues before approval by DOE of non-DOE funded work. LANL's implementation of this requirement is documented in LANL Administrative Requirements (AR) contained in the Laboratory's Environment, Safety, and Health Manual. AR 1-10, dated August 30, 1991, requires an assessment of all new projects for ES&H concerns. For reimbursable work, AR 1-10 initially requires a checklist form to be completed by the LANL project leader for the proposed project. This form (i.e., Form 1308) asks a series of questions directed toward identifying potential ES&H concerns related to the project. Unfortunately, the form physically included as an attachment to AR 1-10 requires no signature and does not require a review, by a competent ES&H professional familiar with the proposed work. This deficiency was recognized by the Laboratory prior to the Tiger Team's review and a revised form has been created which requires signatures by the project leader and the primary division ES&H representative. However, AR 1-10 has not been revised to include the modified form. Hence, what promises to be a good procedure is not yet fully defined.

AR 1-10 requires that the Facility and Safety Analysis (F&SA) Section of the Safety and Risk Assessment Group (HS-3) review each checklist form to

determine if the initiator must complete an ES&H questionnaire. The ES&H questionnaire is significantly more extensive than the checklist and addresses issues relating to siting, occupational safety, fire protection, life safety, industrial hygiene, health physics, process and facilities safety, criticality safety, decontamination, environmental protection, and radioactive and hazardous waste management. In both the checklist and questionnaire, NEPA is an obvious omission from the list of candidate issues. The F&SA Section distributes the completed questionnaire to the ES&H Questionnaire Committee. This Committee determines if there are ES&H concerns and identifies the LANL organization responsible for resolving each concern. While an auditable permanent file is required for documenting the resolution of each concern, no formal procedure exists to insure that issues raised by the ES&H Questionnaire Committee or by the LANL organization responsible for resolving each concern are properly addressed prior to commencing the project. Stated another way, project commitments could potentially be made while outstanding ES&H issues remain unresolved.

LANL's procedure for ES&H review is described by cognizant LANL officials as preventing commitments from being made and preventing work from being started until all ES&H issues are resolved. As currently written, AR 1-10 contains no such clear prohibition. Furthermore, the procedure described by LANL officials, if formalized, would dictate the performance of the ES&H review during the LANL internal funding approval process. The described approach would likely be effective for the vast majority of WFO and CRADA projects. However, a procedure has yet to be developed to insure that ES&H considerations have been addressed for those proposals which may create a LANL obligation prior to the commencement of the LANL internal approval process.

Guidance material such as LANL's "Proposal Preparation Handbook" and LANL's "Guidelines, Procedures, and Checklists for Preparing a Cooperative Research and Development Agreement" used by Laboratory personnel who may not be familiar with the need to identify ES&H issues early in the planning process, does not contain information regarding the process required by AR 1-10. Likewise, some Laboratory personnel extensively involved in WFO and CRADAs did not evince a satisfactory understanding of the Laboratory's procedure for inclusion of ES&H issues in the WFO and CRADA approval process.

References

•TSA-1: EA.2-2 and EA.4-1.

Self-Assessment

This finding was partially addressed in the LANL Self-Assessment.

FINDING MF-28 **Los Alamos National Laboratory Oversight of Johnson Controls World Services, Inc.**

There is no formal Los Alamos National Laboratory system for the total integration and coordination of day-to-day program or environment, safety, and health (ES&H) directions to Johnson Controls World Services, Inc. (JCI) which would preclude or detect conflicting guidance or priorities for completion of assigned tasks.

Discussion

The Laboratory has a formal and reasonably well-documented system for the assignment of specific tasks to JCI in the form of work authorizations and small job tickets which are issued against standing authorizations. However, there are a number of different organizations authorized to approve the work authorizations or small job tickets. In addition, the ES&H staff organizations (Safety and Risk Assessment Group (HS-3)) as well as the line organizations frequently provide verbal instructions and guidance to JCI personnel at lower levels. The combination of these factors occasionally results in conflicting ES&H-related directions or guidance from the various elements of the Laboratory. Therefore, the resolution of such conflicting guidance from the Laboratory becomes the responsibility of JCI which could potentially result in some delays in the implementation and/or application of important safety concerns.

It appears that a program or project management control system has not yet been developed at the Laboratory for the integration and coordination of day-to-day program direction, ES&H directions, or internal controls and oversight of subcontract functions. It is acknowledged that the process for formal contract changes or authorizing work outside of the current contract scope appears to be well defined and understood by all parties.

References

•TSA-1: QV.1-3 and PP.3-2; •TSA-4: MA.1-1.

Self-Assessment

This finding was identified in the JCI Self-Assessment Report.

FINDING MF-29 "Agreement In Principle" Implementation

There is no document which defines the roles, responsibilities, and protocols among the Department of Energy, the state, and Los Alamos National Laboratory to facilitate full and open cooperation in implementing the Agreement in Principle.

Discussion

Effective interaction with state officials is crucial to ensuring public safety and health and protecting the environment. A mechanism which has been used at several DOE sites is an Agreement in Principle for Environmental Oversight and Monitoring (AIP). The same mechanism is being used in the State of New Mexico for state oversight of DOE activities. The AIP was signed by the State of New Mexico and AL on October 22, 1990. The AIP is an omnibus agreement that includes all DOE sites in New Mexico. Both the state and DOE agree that the AIP needs to be updated because the listed milestones are no longer valid, and they are currently modifying the AIP.

Recognizing that the AIP needs to be comprehensive and reflect the views of all affected or involved parties, it is believed that the AIP has two major shortcomings. The first is that the AIP did not cover specific implementation roles and responsibilities for individual sites. The second is that LANL was not involved in the development of the agreement. DOE, the state, and LANL all agree that the protocols for activities conducted by the onsite state representatives and the role of LANL in this process need to be developed. In view of these shortcomings, several meetings have taken place in the last year to negotiate site-specific implementation agreements. Both LAAO and LANL have been a party to these negotiations. In addition, LAAO has drafted a document entitled "Los Alamos Area Office Site Protocol for New Mexico Site Representatives at Los Alamos National Laboratory." The state and LANL have not yet concurred with this document and, hence, it has not been formally implemented.

The absence of a mutually acceptable protocol, which reflects responsibilities and commitments, has resulted in an undefined working situation for the state AIP representatives who are already on site.

Self-Assessment

This finding was identified in the LAAO Self-Assessment as needing an action plan. Although the LAOO Self-Assessment listed a target date of August 1992, LAAO stated that state representatives are already on-site at LANL, and expect to implement the protocol in November 1991.

FINDING MF-30 **The Department of Energy (DOE)-Headquarters, the DOE Field Office, Albuquerque, the Los Alamos Area Office, and the Los Alamos National Laboratory Public Affairs Environment, Safety, and Health Interactions**

The roles and responsibilities among Los Alamos National Laboratory, Los Alamos Area Office, the Department of Energy (DOE) Field Office, Albuquerque, and DOE-Headquarters (HQ) in the Public Affairs area are not clear to all parties and results in an uncoordinated environmental, safety, and health (ES&H) Public Affairs Program.

Discussion

A credible public affairs program is vitally important to conveying information on ES&H-related issues, soliciting public input, and developing a sense of public trust and confidence in ES&H-related activities. It is not evident that the roles and responsibilities are clearly understood among DOE-HQ, AL, LAAO, and LANL with respect to development and implementation of a coordinated Public Affairs Program.

Recognizing the complex nature of public interaction, the absence of a formal agreement among DOE-HQ, AL, LAAO, and LANL appears to limit the effectiveness of public affairs activities. All parties interviewed agreed that there is a need for a formal agreement detailing the proper public affairs protocol, specific roles, and responsibilities of DOE-HQ, AL, LAAO, and LANL.

Currently, there is a draft agreement between LAAO and the AL Office of Intergovernmental and External Affairs (AL-OIEA) regarding how the Public Affairs function is to be conducted. However, this agreement does not mention LANL's role explicitly, and has not been shared with LANL. The agreement does state that all LANL press releases should be reviewed by AL, with AL determining which press releases require LAAO and/or DOE-HQ involvement. In reality, this procedure is not being followed since advance copies of all LANL-prepared press releases are not submitted to AL-OIEA as stated in the agreement. AL/LAAO are relying on LANL's judgement to report institutional and DOE-related information; otherwise AL/LAAO receive "for information" copies. Even if this agreement were functioning as described, AL determines those press releases which should involve LAAO. This does not appear consistent with the Field Office/Area Office relationship that is needed to oversee a coordinated, proactive Public Affairs Program at a laboratory of the size and importance of LANL.

The lack of formal direction has led to friction, resistance, and conflicting guidance regarding LANL's justification for not needing DOE approval to release certain press announcements. The DOE/University of California (UC) contract is silent on the subject of approval authority. Therefore, LANL relies on the University Policy Manual and its Freedom of Expression policy. LANL believes this issue will be negotiated and defined in the new contract.

While the Public Affairs Agreement between LAAO and AL is a start, there is a general consensus of the need for a formal agreement between all responsible parties.

Self-Assessment

The LAAO Self Assessment partially addressed this finding with the following statement: "LAAO's role in community right-to-know is undefined at this time. Past involvement has been inconsistent." No action plan was identified.

FINDING MF-31 **Department of Energy Field Office, Albuquerque/Los Alamos Area Office Public Affairs Program**

The Department of Energy Field Office, Albuquerque and Los Alamos Area Office have not established an effective and coordinated system of communication on environment, safety, and health (ES&H) matters with Los Alamos National Laboratory, the state, local officials, community groups, and the public.

Discussion

The increasing need for ES&H communications has outdistanced AL/LAAO's ability to perform their outreach function. LAAO can no longer simply rely on AL to provide oversight and actual coordination of LANL public affairs.

As with essentially all activities conducted by LAAO staff, responsibilities are derived from the Area Office Manager. The position description of the LAAO Manager describes the following Duties and Descriptions "Acts as the representative for AL in all matters pertaining to public relations at Los Alamos." In the LAAO Manager's Performance Elements, Element G states; "Establish a Public Policy Program in the Area Office" with a Performance Objective stated as "Establish an effective and coordinated system of communication with the contractor, the Operations Office, State, and local officials, community groups, and the public." The commitment to public affairs that currently exists at the Area Office is not consistent with these duties, performance elements, and objectives. The effectiveness of the AL/LAAO Public Affairs Program has been limited by the lack of commitment of an adequate LAAO staff to the requirements contained in the position description.

Currently, a procurement analyst at LAAO provides public affairs liaison along with other duties (i.e., 10 to 30 percent). Most oversight and actual coordination is performed by AL, and, when deemed necessary, there is the involvement of the LAAO Manager. The AL public affairs interface with LANL is handled by the Office of Intergovernmental and External Affairs (AL-OIEA) where a representative spends 60 to 70 percent of the time on LANL business. Roughly 30 to 40 percent of the representative's time is spent on ES&H public affairs issues for the entire AL system. Responsibilities of both of these areas are growing under the current ES&H environment. The AL representative believes that AL has been able to handle LANL public affairs from Albuquerque in the past and, therefore, an increased LAAO public affairs commitment is not a high priority. AL did acknowledge that most of the public affairs effort has been in media coordination with not as much effort expended in community relations outreach; although, the latter is growing in scope and in importance.

The current situation can be characterized by the following examples which do not appear to reflect a fully effective LAAO public affairs activity and which are indicative of an inadequate public affairs commitment:

- Limited direct, comprehensive LAAO involvement with the Public Reading Room and with other LANL Community Outreach programs that encourage and aggressively solicit ideas and concerns of potentially affected parties; and

- The lack of Emergency Operations public affairs responsibilities by LAAO. The primary interactions with the public during an emergency operation are performed by LANL and AL with LAAO concurrence.

The absence of a local LAAO public affairs staff member is inconsistent with the fact that both LAAO and LANL essentially define their "public" as Los Alamos and the surrounding six counties, thus resulting in the LANL Public Affairs Outreach Program not having a local advocate or "champion" who understands the local dynamics and can support initiatives. The Waste Isolation Pilot Plant (WIPP), Pantex, and Pinellas Area Offices have full-time Public Affairs Offices. A similar priority would seem consistent for LAAO given its responsibilities for a laboratory of the size and importance as LANL. A review of an August 12, 1991, document showing Required Positions (identified as priority #1) of the LAAO Administrative Branch shows a request for an "Educational Outreach/PA/Management Assistant - for outreach and public affairs." This confirms recognition by LAAO of the priority need for a full-time public affairs specialist to adequately carry out its assigned role.

Self-Assessment

The LAAO Self-Assessment partially addressed this finding with the following statement: "LAAO's role in community right-to-know is undefined at this time. Past involvement has been inconsistent." No action plan was identified.

FINDING MF-32 Los Alamos National Laboratory Community Relations Outreach Program

Los Alamos National Laboratory has not fully implemented an aggressive proactive environment, safety, and health (ES&H) outreach program.

Discussion

The need for ES&H communication with the general public has escalated in this country during the last decade and reflects the increased importance of public and institutional interaction on the success of ES&H-related programs. This increasing need for ES&H communication has resulted from congressional demands, increased public awareness of ES&H issues, and escalating requirements and demands of regulatory agencies. This expanded need has outdistanced LANL's current capability to effectively perform its outreach function by using former methods. LANL can no longer simply rely on providing economic and technical information to the public. Instead, current circumstances require aggressive, creative, and credible solicitation of input and involvement from the public on ES&H concerns.

The LANL Community Relations Group has a comprehensive and logically structured Public Outreach Program Plan. However, many DOE, LANL, and community individuals expressed the belief that the LANL outreach efforts were reactive and did not anticipate future events, except for certain "hot" issues which were readily obvious. The consistent reason given for the reactive nature of the outreach efforts was that the LANL Community Relations Group does not have sufficient staff to accomplish their ever increasing program objectives. (This issue was also addressed in an Environmental Subteam Finding. See Finding IWS/CF-2.)

A contributing factor to this finding is the absence of an aggressive LAAO ES&H outreach program as described in Management Finding MF-31. The lack of a LAAO advocate or "champion" for the outreach program tends to reinforce the lack of priority which LANL places on this activity.

Self-Assessment

The LANL Self-Assessment fully identified this same finding in finding PI1.1. In LANL's draft Action Plan for this finding, they lay out a very good and aggressive public outreach program. The need for 2.5 new full-time equivalent personnel to be able to carry out the program is identified.

FINDING MF-33 **Los Alamos National Laboratory Internal Communications Policy**

The lack of a documented Los Alamos National Laboratory policy for internal communications has resulted in conflicting environmental, safety, and health (ES&H) information and guidance being provided to employees.

Discussion

For a variety of reasons, effectively communicating with LANL staff on issues related to ES&H is crucial to implementation of a successful, credible, and comprehensive program of ES&H. First, LANL is attempting to effect a cultural change that redirects over 40 years of values, attitudes, and beliefs. To effect such a change demands open, thorough, consistent, and innovative mechanisms for communicating. Second, the staff must be able to describe the importance of ES&H to the general public; the staff are, in essence, the first line ambassadors in the arena of ever increasing public interactions. Third, recognizing the demographics and somewhat isolated nature of Los Alamos, the need for open and effective communications is underscored by the fact that the Laboratory is an integral member of the Los Alamos community.

Employee communications was repeatedly expressed as a problem during interviews with LANL staff. The problem was expressed as too many employee communications being disseminated to staff with no central control to ensure consistency. Thus, many conflicting messages, particularly on ES&H, were being spread throughout the Laboratory as individual organizations attempted to communicate various issues on their own. The result overwhelms the employees, leaving them to determine the significance of the material they receive.

A comprehensive employee communications program communicates institutional goals and management expectations in all areas, including ES&H, and provides for timely, clear, and consistent communications with employees. Employee communications take many forms, both formal and informal and, therefore, cannot be totally controlled. However, they can be more effective if they are coordinated and consistent with clearly defined and approved policy.

Self-Assessment

This finding was identified in the LANL Self-Assessment as both a finding and as a part of a key finding. Draft Action Plans have been written for both.

FINDING MF-34 University of California Support and Participation

The University of California does not provide effective environment, safety, and health (ES&H) planning or policy guidance to the Los Alamos National Laboratory. Oversight of ES&H programs are minimally effective.

Discussion

Corporate Planning, Policies, Procedures, Goals, and Objectives

The University of California has demonstrated interest and concern about the overall management of the Laboratory including ES&H as evidenced by the appointment of a full-time Liaison Officer stationed at the Laboratory and continued support of the Health, Safety, and Environmental Advisory Committee (HSEAC). However, that concern has not yet resulted in the issuance of a comprehensive policy statement which reflects the position of the Board of Regents and the President with respect to promoting and fostering observance of ES&H regulations and requirements as well as seeking remedies to correct or mitigate the environmental consequences of prior programs and activities.

Many of the organizations involved in the Laboratory programs, as well as individual employees, appear to attach great importance and value to their association with the University of California. Therefore, a policy statement which clearly reflects the concerns and support of the Regents and the President, with respect to current and future ES&H policies and activities, could potentially strengthen the positive position which has been taken by the Laboratory Director regarding aggressive compliance with the provisions of the prime contract with DOE.

University Oversight of ES&H Functions

HSEAC was appointed by the President in 1980 to assess the ES&H activities of the Laboratory, including progress in cleanup and disposal of hazardous wastes, emergency preparedness, and mitigation of nuclear accidents. The HSEAC meets once or twice yearly, at the Laboratory, to review selected programs and activities and submits a report of their findings to the President. However, the HSEAC has not been particularly aggressive in seeking out ES&H problems or concerns at the Laboratory and has only been minimally effective in influencing policies, procedures, or priorities. A significant number of important policy issues and deficiencies were identified in the Laboratory Self-Assessment Report. However, it does not appear that any of these have been previously identified by the Committee and subsequently reported to the Office of the President. Apparently, the University does not currently have a capability to conduct independent compliance reviews at a more detailed level than those functions which are traditionally addressed by the HSEAC.

Under the provisions of the prime contract, the University receives a management allowance which was increased by approximately $1,000,000 during the current contract period. The contract language indicates that some amount of this allowance will be utilized for "increased University and Board of Regents oversight of the operations of the Laboratories." However, there are no indications that University or Board of Regents oversight of ES&H functions has changed appreciably from the prior levels.

The University is currently in the process of formulating plans which represent a significant departure from the existing contractual relationships with DOE and which would place the University in a more direct role in both management and oversight of Laboratory operations. However, it is premature to evaluate the potential effectiveness of any such changes which will not be solidified until contract negotiations between DOE and the University have been concluded.

Lines of Authority, Responsibility, and Interactions Between the Laboratory and the University

The formal prime DOE contract is specifically with the Board of Regents of the University of California. The Regents have delegated authority and responsibility to the President of the University for execution and administration of contract. The President has further delegated this authority and responsibility to the assigned Laboratory Director. Although these appear to be entirely appropriate delegations of authority and responsibility, they are undocumented. Therefore, the actual responsibilities and authorities of the Regents, the President, the Laboratory Director, and the oversight committees, with respect to ES&H functions, are not well defined in a formal documentary record.

Although the Laboratory Director enjoys a relatively high degree of autonomy in the planning and direction of Laboratory activities and programs, there does appear to be an effective mechanism for regular communications between the Director of the Laboratory and the University President on important issues, including ES&H. The Liaison Officer assigned to the Laboratory appears to serve a productive role in facilitating communications between the Laboratory and the University and has taken a particular interest in assuring that the President is kept informed of significant ES&H issues and concerns.

Reference

TSA-4: OA.4-1.

Self-Assessment

The above findings and observations were partially acknowledged and identified in the LANL Self-Assessment. However, the current draft action plan does not address any remedial actions associated with corporate participation or oversight. The Laboratory has taken the position that the full dimension of University participation in Laboratory operations and oversight of ES&H will not be fully defined until negotiations for the new contract have been completed. Therefore, it would be premature to prepare an action plan to address these issues. Moreover, the Laboratory asserts that the current management allowance is not adequate to provide for an expanded University role in the management and oversight of Laboratory functions.

Although there is some merit to those assertions, there are some interim actions which could be initiated by the University which would be totally consistent with the provisions of the existing contract such as the issuance of broad policy guidance and direction which reflects some degree of "ownership" by the University and possibly some restructuring of the charter of the HSEAC to strengthen their oversight role of critical ES&H issues at the Laboratory.

5.6 NOTEWORTHY PRACTICES

There were no noteworthy practices identified by the Management Subteam.

5.7 SUBTEAM COMPOSITION AND AREAS OF RESPONSIBILITY

Areas of Responsibility	Name/Organization
Management Subteam Leader	Ralph Throckmorton U.S. Department of Energy Idaho Field Office
Assistant Subteam Leader	Yvonne Garbe U.S. Department of Energy, Headquarters
Management Assessment	Mayhue Bell Private Consultant
Management Assessment	Steven Casto U.S. Department of Energy Oak Ridge Field Office
Management Assessment	Ray Duncan Private Consultant
Management Assessment	Charles Gilmore U.S. Department of Energy Idaho Field Office
Management Assessment	Roger Griebe Organizational Analysis Corporation
Management Assessment	Lisa Herrera U.S. Department of Energy, Headquarters
Management Assessment	Richard Loop U.S. Department of Energy Idaho Field Office
Management Assessment	Robert McCallum Private Consultant
Management Assessment	Marvin Norin Private Consultant
Management Assessment	Donald Parker Private Consultant
Report Coordinator	Lydia G. Guerra M. H. Chew & Associates

6.0

SELF-ASSESSMENT

6.0 EVALUATION OF SELF-ASSESSMENT PROGRAMS AND REPORTS FOR THE LOS ALAMOS NATIONAL LABORATORY, THE LOS ALAMOS AREA OFFICE, THE FIELD OFFICE, ALBUQUERQUE, AND THE PROGRAM SECRETARIAL OFFICES

6.1 INTRODUCTION

On January 26, 1990, the Secretary of Energy directed all line organizations to implement a comprehensive self-assessment program to identify and characterize environmental, safety, and health (ES&H) concerns relating to their operations and directed the Tiger Teams to evaluate the effectiveness of the self-assessment programs of the sites being reviewed. On July 31, 1990, the Secretary issued guidance on the conduct of self-assessments, stressing the importance of comprehensive, routine self-assessments within the U.S. Department of Energy (DOE) and its contractors.

6.2 SCOPE

The Tiger Team evaluated the self-assessment reports and programs of Los Alamos National Laboratory (LANL) and its subcontractors; the DOE Los Alamos Area Office (LAAO); the Los Alamos County Fire Department; and the DOE Field Office, Albuquerque (AL). The team also reviewed the status of the self-assessments in the DOE program offices of Defense Programs (DP), Energy Research (ER), Nuclear Energy (NE), and Environmental Restoration and Waste Management (EM). These program offices are the primary DOE funding sources for the LANL programs.

The Laboratory self-assessment documentation, the plan to institutionalize self-assessment, and the progress against that plan provided the scope of the Laboratory evaluation. This progress evaluation included the efforts of the Laboratory Assessment Office, the organization responsible for self-assessment.

In addition, the Tiger Team reviewed two self-assessment reports prepared by the onsite Laboratory subcontractors, Johnson Controls World Services, Inc. (JCI) and Mason & Hanger (M&H).

For LAAO, the Tiger Team evaluation included the self-assessment report prepared for the Tiger Team visit, how it was accomplished, and the status of self-assessment institutionalization.

A very preliminary self-assessment document was assembled by the Los Alamos Fire Department, a prime contract administered by LAAO for fire protection of LANL, DOE, and the surrounding community. The Tiger Team reviewed this document which consisted of data sheets prepared by individual LAFD employees.

For AL, the Tiger Team evaluation included plans for a self-assessment organization, the written self-assessment report prepared for the Tiger Team visit and how it was accomplished, the program plan to institutionalize self-assessment, and the status of its implementation.

6.3 EVALUATION STRATEGY

The Tiger Team Leader established a self-assessment Task Group comprised of the Deputy Team Leader and four representatives of the Management Subteam with

support from the Environmental and Safety and Health Subteams. Each of the representatives from the Management Subteam on the self-assessment Task Group also evaluated other elements of management performance yielding a broader perspective of the self-assessment assimilation and understanding by managers and employees.

The Task Group used the following guidance:

- SEN-6D-91 Secretary of Energy Notice Subject: Departmental Organizational and Management Arrangements (May 16, 1991);
- Memorandum, Guidance On Environmental, Safety, and Health Self-Assessment, from the Secretary of Energy to Secretarial Officers, Managers, Operations Offices, Administrators, and Power Marketing Administrations (July 31, 1990);
- Draft Environment, Safety and Health Management Performance Objectives and Criteria for Tiger Team Management Assessments (August 15, 1991);
- Tiger Team Management and Organization Appraisal Performance Objectives and Criteria (January 7, 1991); and
- Attachment 2 of the Tiger Team Assessment of the Sandia National Laboratory.

The self-assessment reports that were reviewed and compared to the Tiger Team findings and concerns consisted of the following:

- For LANL - Los Alamos National Laboratory ES&H Self-Assessment Report LA-12200-MS, August 1991 and all Division and Group self-assessments completed through September 23, 1991;
- For LANL subcontractors - Johnson Controls World Services, Inc., ES&H Self-Assessment, September 10, 1991, and Mason & Hanger - Silas Mason Co. Inc., ES&H Self-Assessment, September 20, 1991;
- For LAAO - United States Department of Energy, DOE Field Office/Albuquerque, Los Alamos Area Office, Assessment of Environmental, Safety, and Health Practices at Los Alamos, September 1991;
- For the LAFD - A collection of self-assessment forms of various dates in late August 1991;
- For AL - Department of Energy Field Office, Albuquerque Self-Assessment Report, Volumes I and II and Volume III, Book D, September 18, 1991; and
- For DOE-Headquarters Program Offices - Self-assessment reports have not been prepared.

The Task Group initially developed an understanding of the organizational roles, responsibilities, and authorities of LANL through a DOE-Headquarters briefing prior to the Tiger Team's arrival on-site. This briefing included

discussions on organizations and missions of DP, AL, LAAO, and LANL. Once the Tiger Team arrived on-site on September 23, 1991, additional briefings were conducted concerning (1) the results of the AL, LAAO, and LANL Self-Assessments, and (2) specific activities and programs that are associated with the various management performance objectives and criteria.

During daily Management Subteam meetings and Tiger Team Leaders meetings, information from the Environmental Subteam and the Safety and Health Subteams was transferred to the self-assessment Task Group. The objective of these interactions was to further focus the self-assessment Task Group into areas of concern, uncover broad-ranging self-assessment problems, and assure all data were included in the identification and evaluation of root causes.

The line of inquiry adopted by the Task Group was to determine the involvement and conduct of self-assessment performance at each organizational level at LANL and its subcontractors, LAAO, LAFD, and AL. To this end, interviews were conducted at AL; LAAO; LAFD; LANL; JCI; and M&H at all organizational levels. Due to time constraints, the Task Group employed a system of both a random and selected interview process to assess management and employee self-assessment involvement and understanding.

At AL, interviews were conducted with the Field Office Manager down through the organization to the individual non-supervisory level. Initial interviews were conducted with members of the ES&H organization and the AL Task Group responsible for preparing the AL Self-Assessment Report. Two Assistant Managers (AMs) (i.e., AM for Projects and Facility Modernization (P&FM) and AM for Management and Administration (M&A)) were also interviewed. The AMs were selected because of the ES&H issues inherent in project management, and because the institutionalized AL Self-Assessment Program is proposed to reside in the M&A AM. A vertical organizational slice of the P&FM AM personnel was interviewed to determine the extent of involvement of this AM in the AL Self-Assessment conducted for the Tiger Team, and to assess their understanding of self-assessment concepts and culture. The AL September 1991 Self-Assessment Report, the proposed formal Self-Assessment Program Plan, and selected documents in support of the proposed AL self-assessment organization were reviewed.

Activities at LAAO were evaluated through interviews with the Area Office Manager down through the organization to individuals at the non-supervisory level. Interviews were conducted with Chiefs of the Facility Operations Branch, the Environment, Safety, and Health Branch, and the Security and Nuclear Safeguards Branch. Interviews were also conducted through a vertical organizational slice in the Facility Operations Branch to determine their understanding of self-assessment concepts and culture. Documents reviewed in support of the interviews included the LAAO Self-Assessment Report, draft "roles and responsibilities" documents, position descriptions, and weekly reports documenting activities.

For the Laboratory, data were gathered from interviews with the University of California liaison representative and the Laboratory Director down through the organization to the group level in an increasing width of sampling. Besides probing the organization having the primary expertise for ES&H (i.e., the Associate Director for Operations) and the Laboratory Assessment Office, two line organizations were selected for in-depth evaluation. The organizations selected were those of the Associate Directors for Research and for Nuclear

Weapons Technology. These organizations represent a breadth in anticipated formality of operations that would encompass operations across the Laboratory. Additionally, they represent organizations having prime program reporting responsibility to two different programs (i.e., ER and DP). Within the Research organization, two divisions were selected for interviews: one to represent organizations performing primarily theoretical work and one to represent those organizations performing experimental work. The Theoretical Division (T) and the Medium Energy Physics Division (MP) were selected to suit these criteria. MP operates the Los Alamos Meson Physics Facility. It was felt that these two Divisions represent the two basic modes of research.

In the Nuclear Weapons Technology organization, three divisions were selected on the basis of the expected range of the formality culture of the organization. As a result the Dynamic Testing Division (M) having a long history of high explosives use, the Design Engineering Division (WX) being a primary long-time Laboratory functional organization, and the Applied Theoretical Physics Division (X) representing an analytical organization having lesser risk functions which the Task Group expected to be less formal, were selected. The Associate Directors, Division Leaders, and some Group Leaders were interviewed.

Special attention was given to the Laboratory Assessment Office. This organization was formed under another name in June 1989, and reported to the Associate Director of Operations. Since July 1991, it has reported to the Laboratory Director as an independent organization. The Laboratory Assessment Office received its formal introduction to the Laboratory in the September 1991 policy guidance from the Director. The Laboratory Assessment Office is responsible for self-assessment. An extensive review of the functions of this office was conducted. The planned office functions begin by serving as the Laboratory doorway for an incoming audit or review and end by trending the results and formally closing out action items. It should be understood that the plan for this program was submitted to LAAO on September 20, 1991. It was forwarded to AL for further review and, hence, has not yet been approved. This approval must be provided by DP. Some activities of the Laboratory Assessment Office are quite mature while other parts, such as the lessons learned, are in the process of being structured.

In addition to the interview data, a variety of documents relating to self-assessment were reviewed. These included the self-assessment documents referred to earlier, some Laboratory Division self-assessment institutionalization plans, the Laboratory plan for self-assessment institutionalization, and two preliminary versions of the Laboratory Self-Assessment Corrective Action Plan.

In retrospect, the Task Group feels that these organizations did represent the span of Laboratory and DOE (i.e., AL and LAAO) activities and that a wide range of response to self-assessment was found. In addition, recurring themes applicable to the entire Laboratory and DOE were also found such as problems within LANL in communicating the responsibilities of the Laboratory Assessment Office, a cautious willingness to implement the Department's self-assessment initiatives, adaptability to change, and a mixed demonstrated self-assessment leadership ability at the Division level within LANL. A more detailed discussion of the status of the Laboratory, LAAO, and AL with regard to self-assessment is found in Sections 6.5, 6.6, and 6.7 respectively.

6.4 EVALUATION SUMMARY

6.4.1 Summary of Program Findings

The self-assessment Task Group assessed LANL's self-assessment program plan and its implementation and identified six findings. The Task Group also reviewed both LAAO's and AL's proposed self-assessment program plans reports and identified three findings for LAAO and four findings for AL. One finding each for LAAO and AL dealt with their impact on LANL's assessment program. A single self-assessment finding was cited for the DOE-Headquarters (HQ) principal Program Secretarial Offices (PSOs) that have funding responsibility for LANL. The self-assessment findings are summarized in Table 6-1 below.

The Tiger Team Task Group analyzed the LANL, LAAO, and AL self-assessment findings for root causes and derived to (1) the lack of guidance and direction for implementing appropriate self-assessment programs from the principal PSOs in DOE-HQ, and (2) the lack of training and communication of the self-assessment program requirements by LANL, LAAO, and AL to their employees.

TABLE 6-1
SUMMARY OF SELF-ASSESSMENT FINDINGS

Los Alamos National Laboratory Findings

SA-1	Los Alamos National Laboratory's self-assessment program is not comprehensive in scope, is not institutionalized across the site, and has not been approved by the U.S. Department of Energy.
SA-2	Deficiencies in the Los Alamos National Laboratory corrective action process impede timely, proactive, and prioritized actions by staff and management.
SA-4	The Los Alamos National Laboratory Assessment Office is overdependent on subcontractor support to carry out all of its assigned responsibilities.
SA-5	Los Alamos National Laboratory has not adopted a formal root cause analysis process, trending process, and mechanisms to communicate root causes, trends, and lessons learned.
SA-6	Guidance on line management self-assessment is not adequately communicated within the Los Alamos National Laboratory.
SA-7	The Los Alamos National Laboratory Self-Assessment Report does not include the self-assessment results from all of the organizations and does not adequately describe how the generalized findings apply to specific Laboratory facilities.

DOE Los Alamos Area Office Findings

SA-3	The U.S. Department of Energy (DOE) Field Office, Albuquerque and Los Alamos Area Office's late issuance of DOE environment, safety, and health external assessment final reports, action plan approvals, and certification of corrective action closeout,

impedes the corrective action process of Los Alamos National Laboratory's Assessment Program.

SA-8 The Los Alamos Area Office has not implemented the management systems which facilitate an effective self-assessment program.

SA-9 Los Alamos Area Office management has not provided adequate communication and/or training on self-assessment to all of the Area Office employees.

SA-10 The Los Alamos County (a prime Management and Operating contractor to the Los Alamos Area Office for the Fire Protection services for the U.S. Department of Energy and Los Alamos National Laboratory) has not developed a self-assessment program plan. In addition, Los Alamos County prepared an inadequate self-assessment report.

DOE Field Office, Albuquerque Findings

SA-3 The U.S. Department of Energy (DOE) Field Office, Albuquerque and Los Alamos Area Office's late issuance of DOE environment, safety, and health external assessment final reports, action plan approvals, and certification of corrective action closeout impedes, the corrective action process of Los Alamos National Laboratory's Assessment Program.

SA-11 The U.S. Department of Energy Field Office, Albuquerque has neither completed nor implemented a formal institutionalized self-assessment program, nor formally identified an organization(s) which will be responsible for conducting the self-assessment program.

SA-12 The U.S. Department of Energy Field Office, Albuquerque has not yet fully implemented the management systems which facilitate an effective self-assessment program.

SA-13 The U.S. Department of Energy Field Office, Albuquerque management has not provided adequate communication and training on self-assessment to all of the Field Office employees.

SA-14 The U.S. Department of Energy Field Office, Albuquerque Pre-Los Alamos National Laboratory Tiger Team Self-Assessment Report (and associated process) do not fully meet the Secretary's guidance for a comprehensive self-assessment program.

DOE-Headquarters Program Secretarial Offices (DP, EM, NE, and ER)

SA-15 U.S. Department of Energy (DOE)-Headquarters principal Program Secretarial Offices for Los Alamos National Laboratory have not provided the necessary guidance to the DOE Field Office, Albuquerque; Los Alamos Area Office; and Los Alamos National Laboratory to facilitate institutionalizing self-assessment programs and independent self-assessment organizations in the field as required in Secretary Watkins' self-assessment guidance of July 31, 1990, and in SEN-6D-91.

6.4.2 Evaluation of Self-Assessment Reports

The Tiger Team findings and concerns were compared with those identified by LANL, LAAO, and AL in their self-assessment reports, and a determination was made whether each finding and concern was either fully or partially identified or not identified at all. The results of these evaluations are summarized in Table 6-2.

TABLE 6-2
COMPARISON OF LANL, LAAO, AND AL
SELF-ASSESSMENT REPORTS FINDINGS AND CONCERNS

Organization	Fully Identified	Partially Identified	Not Identified
LANL	318 (40%)	243 (31%)	226 (29%)
LAAO	15 (15%)	27 (28%)	55 (57%)
AL	6 (7%)	21 (24%)	61 (69%)

6.5 EVALUATION OF LOS ALAMOS NATIONAL LABORATORY

6.5.1 Evaluation of Self-Assessment Program

The Laboratory Assessment Program, approved by the Laboratory in September 1991, is intended to establish a comprehensive program for the management of ES&H assessments to support performance improvement of Laboratory operations. Director's Policy No. 111 established the Laboratory Assessment Office, which reports to the Director, as the office of prime responsibility for self-assessments.

The Task Group evaluated the Laboratory assessment program and the status of program implementation. The evaluation of the assessment program and implementation resulted in six findings.

The Task Group found that the Laboratory's self-assessment program is not sufficiently comprehensive in that key Laboratory assessment functions, such as those for reactor safety, criticality safety, quality assurance, and some aspects of line management self-assessments are not currently incorporated in the program. Activities to be implemented as part of the Laboratory Assessment Program, such as trend analysis, root cause analysis, and the communication of lessons learned, are not in place.

Although the Laboratory Assessment Office is newly established, certain ones of its functions have been ongoing activities (i.e., internal appraisals and tracking). It was found that there has been a lack of timely actions to issue internal appraisal reports and to develop corrective action plans by the line side of the Laboratory. Additionally, the Laboratory's assessment activities have been impeded by a lack of timely actions by AL and LAAO to issue external appraisal reports and to close out corrective actions completed by the Laboratory. The Task Group did not obtain a sense of strong Laboratory management involvement in the self-assessment and corrective action processes. The lack of timeliness in the work flow supports this view (see Finding SA-3).

The Laboratory has made a good start in structuring a self-assessment process. The structure includes requirements for independent internal ES&H assessments, line management ES&H self-assessments, and the coordination of external ES&H assessments. A data base for corrective action tracking and validation is in place. To date, LANL has not included self-assessment in the strategic planning process.

It is noted that self-assessment is a topic included in the contract renewal negotiations between the University of California (UC) and DOE. As a result, a Self-Assessment and Evaluation Task Force, comprised of UC and DOE representatives, has been established to negotiate self-assessment and related functions for inclusion in the new contract. The University has endorsed the self-assessment process and plans to provide increased involvement in self-assessment.

The findings are stated and discussed on the following pages.

SA-1 Los Alamos National Laboratory Self-Assessment Program

Los Alamos National Laboratory's self-assessment program is not comprehensive in scope, is not institutionalized across the site, and has not been approved by the U.S. Department of Energy.

Discussion

The Secretary's Guidance on ES&H Self-Assessment of July 31, 1990, states that a self-assessment program should be built upon existing programs and activities. In addition, the program should be comprehensive and integrate all of the relevant onsite activities.

The responsibilities of the Reactor Safety Committee and the Criticality Safety Committee are not fully integrated into the Laboratory Assessment Program. Director's Policy No. 108 (DP-108) assigns independent assessment responsibilities to these committees and requires committee findings to be communicated to the Laboratory Assessment Office for formal tracking. DP-108 does not require the communication of appraisal plans, schedules, report tracking, and corrective action tracking to the Laboratory Assessment Office. The Laboratory Assessment Program requires the Laboratory Assessment Office to report monthly to the ES&H Council on the status of the assessment program except for reactor safety and criticality safety. Status of these key safety areas is required to be reported annually, that is, on a much-reduced frequency than other ES&H areas.

Director's Policy No. 110, Quality, does not require the Quality Operations Office (QOO) to communicate audit and surveillance information to the Laboratory Assessment Office. However, the Task Group was advised that the QOO and the Laboratory Assessment Office have agreed on the transmittal of all relevant QOO audit and surveillance information to the Laboratory Assessment Office for integration and tracking, but this agreement is yet to be formalized. It is also intended that the Laboratory Assessment Office track Nonconformance Reports and Correction Action Requests for QOO.

Currently, appraisal information from the Reactor Safety Committee, the Critically Safety Committee, and the QOO are not in the internal appraisal data base.

The Laboratory Assessment Program provides for the conduct of internal assessments, line management self-assessments, and the coordination of external assessments. Only partial implementation in these areas has been achieved. Internal assessments have not been conducted on a Laboratory-wide basis. Very few line management self-assessment plans have been developed.

The Laboratory Assessment Office has not effectively coordinated external assessments apparently because the office's responsibilities have not been communicated.

Self-assessment requirements for the major onsite subcontractors, Johnson Controls World Services, Inc. and Mason & Hanger have not been included in the Laboratory Assessment Program.

Monthly status reports of appraisal reports and corrective actions go directly to the responsible Division Leaders. Division Leaders distribute the status

reports to their groups. Associate Directors are not on distribution. The Director of the Laboratory Assessment Office does report monthly to the ES&H Council which includes the line Associate Directors. The Office Director's report is focused on overall status. There is no evidence of one-on-one meetings with Associate Directors on problem areas. Associate Directors (ADs) have not requested appraisal/corrective action status specific to their areas. It is not clear that it is the practice of the Laboratory Assessment Office to elevate particular corrective action problems to the individual ADs or the Director, nor is it clear that there is proactive involvement of the ADs in the corrective action process.

The Line Management ES&H Self-Assessment Plan (Chapter 4 of the Laboratory Assessment Program) does not include Reactor Safety and Criticality Safety as part of the ES&H disciplines to be assessed. These are key disciplines, and it is not clear that they should be omitted from the line's self-assessment process.

The Laboratory Director receives a review every 5 years by a panel of outside experts convened by the University of California. The charter for this review includes ES&H as a specific review factor. (Reference: Five-Year review of DOE Laboratory Director, Office of the President, September 24, 1984). The review process is not included in the Laboratory Assessment Program.

The Laboratory Assessment Program Plan is in the DOE approval process. The Task Group was advised that LAAO and AL have reviewed the document and meetings will be held with the Laboratory Assessment Office to resolve comments.

Self-Assessment

This finding was partially addressed in the LANL Self-Assessment (see Finding QV.2-1).

SA-2 Los Alamos National Laboratory Corrective Action

Deficiencies in the Los Alamos National Laboratory corrective action process impede timely, proactive, and prioritized actions by staff and management.

Discussion

It is essential that all steps in the assessment process, including corrective action, be performed in a well-ordered manner. This is necessary so that staff and management can use the process in real-time and to ensure the credibility of the process.

The schedule requirements specified by the Laboratory Assessment Program for issue of an Independent Internal ES&H Appraisal final report are generally not met. The Laboratory Assessment Office data base shows that a number of appraisal reports were issued from 1 month to more than 7 months after completion of field investigations.

Action plans responding to internal appraisal outcomes were submitted from about 1 month to 3 months or more after issue of appraisal final reports. The Laboratory Assessment Program does not specify schedule requirements for submittal and approval of action plans.

As stated in the Laboratory Assessment Program, action plan status is not entered in the Laboratory Assessment Office data base until an action plan is approved. Thus, there may be a substantial time period where action plan status is not readily determined.

The responsible line manager is required to track corrective actions resulting from Line Management ES&H Self-Assessments (see Finding SA-1). Deficiencies identified by these internal appraisals are required to be provided to the Laboratory Assessment Office for use in analysis and trending. This office does not track the status and completion of these corrective actions. The Laboratory Assessment Office may evaluate line performance on tracking and closeout of line self-assessment corrective actions as part of the annual appraisals to be conducted by that office. However, line management performance on these corrective actions cannot be determined in an ongoing sense as can be done for other corrective actions.

The Laboratory Assessment Office is tasked to analyze ES&H appraisals to provide data for trending and lessons learned. The lack of requirements for inputs from reactor safety, criticality safety, quality operations, and line self-assessments diminishes the office's ability to provide comprehensive Laboratory data.

There is no prioritization scheme within the Laboratory which can adequately aid management to rationally decide which, among many hundreds of ES&H actions, to support in a given fiscal period. A simple four-level ranking is available, but this broad categorization cannot provide a well-reasoned boundary within the large number of desired activities between those which should be funded and those which cannot be funded in a given year. This is even more serious where overhead allocation decisions are made and the total number of proposed ES&H actions is very large.

Self-Assessment

This finding was partially addressed by the LANL Self-Assessment (see Finding PL.1-1).

SA-3 Impact of U.S. Department of Energy Actions on the Los Alamos National Laboratory Corrective Action Process

The U.S. Department of Energy (DOE) Field Office, Albuquerque and Los Alamos Area Office's late issuance of DOE environment, safety, and health external assessment final reports, action plan approvals, and certification of corrective action closeout, impedes the corrective action process of Los Alamos National Laboratory's Assessment Program.

Discussion

Actions incumbent upon AL and LAAO should be implemented promptly so that the Laboratory can proceed with corrective action without uncertainty. Additionally, the systematic conduct of AL and LAAO actions reinforces the Secretary's intent that quality self-assessment programs are to be implemented.

Most of the ES&H external appraisals of the Laboratory are conducted by AL. AL requires that an appraisal report be forwarded to LANL within 45 days. (See Process for Response to OESH Functional Appraisals, Rev. 2-March 1989.) This requirement is not being met. The average time for issuance of a final appraisal report by AL is over 3 months from the completion of field work. AL requires that AL-approved action plans are to be in place within 45 days after submittal of the draft action plan. Few action plans have been approved by AL.

AL requires the Laboratory to submit a completion certification to LAAO when an action has been completed. LAAO is to concur in the completion and forward it to AL for approval. There are no schedule requirements for the LAAO and AL actions. Only a few of the action plans responding to AL ES&H appraisals that were completed by the Laboratory have been closed by AL.

Many of the corrective actions responding to the 1989 Technical Safety Appraisal (TSA) of the Omega West Reactor have been completed by the line organization and independently verified by the Laboratory Assessment Office. A majority of the certifications of completion were sent to LAAO during calendar year 1990 without response by LAAO (see Finding SA-8).

Self-Assessment

This finding has not been addressed in either the AL or LAAO Self-Assessments.

SA-4 Los Alamos National Laboratory Assessment Office Subcontractor Dependence

The Los Alamos National Laboratory Assessment Office is overdependent on subcontractor support to carry out all of its assigned responsibilities.

Discussion

The Secretary of Energy Guidance on ES&H Self-Assessment, July 31, 1990, states that assessments such as those conducted by the Laboratory Assessment Office should generally be conducted by Laboratory staff. The nearly exclusive use of subcontractors should not be a practice; although, supplementary subcontractor support may be appropriate.

The Laboratory Assessment Office has two Team Leaders for health and safety appraisals and one Team Leader for environmental audits. The Team Leaders are Laboratory employees. The Laboratory Assessment Office Independent Internal ES&H Procedure states that appraisal team members are to be selected from the Laboratory or subcontractor personnel. However, the appraisal team members are essentially all subcontractor personnel (see Finding MF-26) except for industrial hygiene and quality assurance support. The Appraisals Group (LAO-2) does include two Laboratory employees to support appraisals in the areas of industrial hygiene and quality assurance.

The Laboratory Assessment Office relies on subcontractor support to verify the corrective action closeouts for external ES&H appraisals. These actions are carried out by individuals under the supervision of a Laboratory Assessment Office staff person.

The Tiger Team was advised that the current use of subcontractor personnel to augment Laboratory staff resulted from a previous hiring freeze and a shortage of ES&H professionals. The Laboratory Assessment Office has since been authorized personnel to decrease the reliance on contractor support for the implementation of all responsibilities.

Self-Assessment

This finding is not addressed in the LANL Self-Assessment.

SA-5 Los Alamos National Laboratory Root Cause Analysis and Trending

Los Alamos National Laboratory has not adopted a formal root cause analysis process, trending process, and mechanisms to communicate root causes, trends, and lessons learned.

Discussion

LANL has prepared a self-assessment program plan which discusses a process to analyze findings, concerns, and deficiencies for root causes; however, no formal process has been adopted. For example, the Laboratory's self-assessment conducted prior to the Tiger Team's arrival included a number of analyses of findings and concerns to determine root causes, all of which were informal and by group consensus. Root causes were first determined at the group level. The results of these initial analyses were compiled at the division levels and reanalyzed by top Laboratory management for root causes (again by informal consensus). The Laboratory agreed that this informality led to varying root causes for similar findings, and LANL recognizes the need to adopt a formal process and provide formal training in the use of the process to maintain consistency and validity.

The Laboratory is actively engaged in contracting a professional instructor to aid in the selection of a root cause analysis process and to provide the necessary training for LANL personnel. The Laboratory Self-Assessment Office (LAO) is trending some Laboratory data compiled from various internal and external appraisals, audits, reviews, and assessments. However, there is no formal process in place that utilizes performance indicators, data from occurrence reporting systems, and a process to analyze these data for trending purposes; nor is there a formal process for developing lessons learned and communicating the information throughout the organization.

The Laboratory was aware of these deficiencies prior to the Tiger Team's arrival. In August 1991, a LANL Task Force was established comprised of several management staff to develop processes to correct the various trending, lessons learned, and communication of deficiencies. The Task Force has made good progress in a short period of time. A draft plan was recently developed describing a basic process that could be expanded to accommodate more data information sources for developing trends in the near future. The Laboratory is conducting some initial pilot tests using Laboratory data to test the process. LANL envisions full implementation of a comprehensive trending, lessons learned, and a communication system for this information by 1993.

Self-Assessment

LANL fully identified this finding in their Self-Assessment (see Finding MG.1-6).

SA-6 Los Alamos National Laboratory Communication of Line Management Self-Assessment Guidance

Guidance on line management self-assessment is not adequately communicated within the Los Alamos National Laboratory.

Discussion

A high percentage of the line organizations have not developed self-assessment plans. Task Group interview data reveals that this resulted from a lack of effective communication of guidance on the development of line management self-assessment plans. As a result, progress in this area is slower than could otherwise be expected and a variety of self-assessment techniques resulted. This has occurred in an environment expected to be quite receptive to self-assessment since all of management from the Laboratory Director to the Group Leaders (about 600 people) have recently received conduct of operations training.

Task Group interviews also revealed that a lack of coordination enabled each division and, in some cases, different groups within a division to develop different data bases to track corrective action plans. This represents an inefficient use of programming skills within the Laboratory and makes transmission of information from one organization to another more difficult. A plan is in place to establish a single data base in the Laboratory Assessment Office by May 1992, which can be used by the entire Laboratory.

Self-Assessment

This finding is identified in the LANL Self-Assessment (see Finding OR.3-3).

6.5.2 EVALUATION OF SELF-ASSESSMENT REPORT

The Laboratory Self-Assessment Report that was prepared for the Tiger Team was completed in August 1991. The self-assessment focused on the ES&H and management areas at the Laboratory and the processes used to evaluate each area differed.

The environmental evaluation began with a review of past audits, inspections, and appraisals to identify and document findings for inclusion in the report. The safety and health assessment included reviews of previous appraisals, Occupational Safety and Health Act (OSHA)-type inspections performed by consultants, interviews, external review data, and a series of subsequent individual organizational self-assessments conducted at the Division level. The management and organization assessment was conducted in each Division using past appraisals on file, along with the results of a management appraisal conducted by management consultants. The management and organization section of the report was then reviewed by a committee of senior-level managers.

The Task Group found, however, that many Laboratory organizations did not supply self-assessment information for the makeup of the LANL Self-Assessment Report. The input data to the report was "rolled up" into findings such that the report cannot show where in the Laboratory the findings and concerns apply. This information was, however, included in the LANL Corrective Action Plan. The results of the data compiled from these three areas were then reviewed and analyzed to derive root causes by group consensus. The report was presented to the Associate Directors and the Laboratory Director for final review and approval.

In Table 6-3, the Tiger Team findings and concerns are compared with those identified in the LANL Self-Assessment to determine which findings and concerns were fully or partially identified or not addressed at all.

TABLE 6-3
COMPARISON OF LANL SELF-ASSESSMENT REPORT FINDINGS AND CONCERNS

Area	Fully Identified	Partially Identified	Not Identified
TSA	280	207	92
Environmental	32	48	32
Management	10	8	8
Self-Assessment	3	2	1
TOTAL	325 (45%)	265 (37%)	133 (18%)

Discussions regarding the methods and procedures employed to conduct the self-assessment, the results of the Laboratory's findings and concerns as compared to those identified by the Tiger Team, and the Laboratory's understanding of the deficiencies cited in its report are discussed in more detail below.

6.5.2.1 Environmental

The environmental portion of the overall LANL Self-Assessment was led by the Division Leader of Environmental Management following the direction from the Team Leader of the ES&H Coordination Center in mid-May 1991. Thus, DOE did not direct LANL to begin a self-assessment, but LANL began on its own initiative.

On May 15, 1991, eight individuals from various environmental areas in the Laboratory were tasked to cover all the environmental areas identified in the Secretary of Energy's July 31, 1990, memorandum on self-assessment (these areas are identical to the environmental areas covered by the Tiger Teams). At the time that the environmental assessment was conducted, there was no management program or master plan providing guidance for compiling the resulting data. LANL did not provide any training or guidance to the various designated self-assessment coordinators. Performance objective criteria were also not identified or outlined. The Environmental Management Division Leader decided to use the following documents as guidance or reference materials:

- three-volume DOE-HQ Environmental Audit Manual checklist;
- various other commercial audit checklists;
- Mary Walker 1987 Environmental Survey Reports;
- Resource Conservation and Recovery Act (RCRA) Annual Inspection Report;
- LANL Operations Management (OM) Environmental Audit;
- LANL audits (3) conducted by LANL Quality Assurance Office;
- previous Tiger Team reports;
- Notice of Violations and Notice of Noncompliances; and
- other internal and external appraisals, reviews, and audits.

The LANL environmental self-assessments did not include interviews or walk-through inspections of any LANL facilities. Thus, the final environmental assessment product consisted primarily of 50 percent of findings that were carried over from previous audits and appraisals and 50 percent from their own knowledge of the environmental areas they worked in and for which they were responsible. In addition, much of the data compiled for the LANL Self-Assessment Report was gathered from audits and appraisals that were performed by external contractors, and not by LANL staff and employees.

The Tiger Team Environmental Subteam reviewed their findings against those identified in LANL's Self-Assessment Report and identified findings that were either fully or partially identified, and those not identified by LANL (see Table 6-3 and Appendix H). In addition, the Environmental Subteam attempted to evaluate LANL's comprehension of the magnitude of their problems and their technical understanding of the deficiencies that they had identified. Interview information, review of the corresponding corrective actions, and various Laboratory documents were used for these evaluations. The subteam's

evaluations for each discipline area of the environmental assessment are provided below.

Air

LANL currently monitors potential sources of radionuclide emissions to the atmosphere at approximately 90 stacks or vents. However, these efforts are not being conducted in accordance with requirements of 40 CFR 61, Subpart H, which was promulgated on December 15, 1989. These deficiencies were recognized in the LANL Self-Assessment Report and in Group Self-Assessments, and a corrective action plan is being developed. The findings cited by LANL, however, did not take into account the fact that 40 CFR 61 includes Subpart H. Emission controls used at some LANL operations to minimize emissions of radionuclides to the atmosphere do not provide as low as reasonably achievable (ALARA) protection to the public and the environment. The LANL Self-Assessment addresses ALARA deficiencies, but does not specifically recognize the need for application of the ALARA process to the protection of the public and the environment. Further reductions in emissions from the Los Alamos Meson Physics Facility (LAMPF) will be realized when the stack is relocated, which will provide for additional decay time for the short-lived gaseous activation products. Problem descriptions identified in self-assessment reports recognized enriched uranium operations. The LANL and Johnson Controls World Services, Inc. (JCI) Self-Assessment Reports recognize the need for operating the asphalt plant in accordance with regulatory and best management practice requirements. The requirements for permits for open burning are not recognized in the self-assessment reports. The problem description for the TA-16 incinerator does not appropriately address proper operations to minimize emissions of smoke.

Surface Water/Drinking Water

LANL is aware of many of their deficiencies in the area of surface water; however, the findings cited by LANL in their self-assessment report reveal a very narrow view of the problems, and they failed to recognize that the problems are greater than identified. The findings, as written, do not address basic organizational inadequacies that are the cause of the more obvious surface water findings. Often, LANL has not been knowledgeable of all of the requirements in DOE Orders and regulations.

In addition to LANL's finding that "operating groups are unsure of their responsibilities concerning identifying discharges into collection systems," it was also clear to the Environmental Subteam through interviews with LANL staff that they are aware of their current inability to inspect all discharges on an ongoing basis, as well as all laboratory facilities to ensure that contributions to discharges are known and understood. LANL staff frequently referred to their wastewater characterization program as the solution; however, this program will only provide a one-time look at discharges and cannot keep up with new changes that occur after the conclusion of the program.

Root causes and corrective actions were not always identified for surface water findings.

Groundwater/Soil, Sediment, and Biota

LANL had fully identified six of eight findings and partially identified the remaining two. Considerable effort was put forth by LANL to understand these deficiencies. LANL has been aware of the numerous deficiencies in the Groundwater Protection Management Program Plan (GPMPP), since its initial draft in May 1990; however, no implementation or corrective measures have been conducted since May 1990.

Waste Management

The LANL Self-Assessment revealed an awareness of waste management problems. Only two of the waste management findings were not identified, and the remainder were divided between full and partial identification. LANL is cognizant of most of their waste management problems, and they have developed workable programs to solve most issues, but there is a lack of landlord commitment to environmental compliance.

Toxic and Chemical Materials (TCM)

Generally, LANL has a limited awareness of TCM issues and underlying root causes. Although the LANL Self-Assessment partially identified TCM findings, the self-assessment focuses on "symptoms" or "direct-incident" problems rather than programmatic issues. For example, LANL partially identifies findings in the polychlorinated biphenyls (PCB) program regarding incomplete PCB inventories or inadequate PCB spill cleanups, but fails to completely identify the lack of programs, ownership, or defined roles and responsibilities.

In the pesticide program, LANL partially identified that the Pest Control Policy had not been updated, but failed to identify the consequences such as pesticide applications being applied in a critical habitat area of an endangered species or the disposal of empty pesticide containers and rinsate.

Although LANL identified some elements of the asbestos finding, LANL did not completely identify the major issue of a lack of a sitewide program and procedures.

Quality Assurance (QA)

Of 15 LANL compliance findings, 8 were fully addressed, 2 were partially addressed, and 5 were not addressed. Four of the five findings not addressed were in the area of laboratory QA. One QA best management practice finding was addressed in the LANL Self-Assessment.

One of the weaknesses in the QA self-assessment was the Environmental Chemistry Group (EM-9) self-assessment. The LANL Self-Assessment contained 135 one-line statements with no discussion. Generally, unless the statements were obvious, little consideration was given the one-line statements by the Tiger Team.

Based on the nature of the findings and the extent of the self-assessment, LANL does not understand either the importance of QA or the methods of implementing a QA Program. QA is viewed as an overhead function that requires detailed implementation only when it is required by the customer. The level of implementation varied from well implemented to not implemented at all.

Generally, the Laboratory understood the requirements, but did not grasp that an effective QA Program must be uniform, consistent, and implemented throughout the site.

The self-assessment conducted by the EM-9 and JCI Environmental Laboratory on the environmental laboratory issues was only partially adequate. QA self-assessments performed were inconsistent throughout LANL and JCI. Some areas, (e.g., waste management, air, surface water, and radiation monitoring) were covered extensively while others (e.g., environmental chemistry laboratories) were lacking.

Radiation

There were 15 findings identified in the radiological area, of which 14 were compliance findings and 1 was a best management practice finding. Of the 15 findings, LANL had a good comprehension of 6 (i.e., environmental thermoluminescence dosimetry (TLD) program; environmental monitoring; preoperational monitoring of facilities, sites, and operations; radiological environmental emergency planning; program for decommissioning contaminated facilities; and annual site environmental report). In these areas, the Laboratory was aware of the problems, and they were initiating corrective actions. Of these six, two were not identified in the self-assessment; however, interviews showed a good understanding, and efforts were underway to address the problems. Four findings that LANL was aware of were Radiological Posting of Outdoor Areas, Liquid Discharges to Previously Contaminated Areas, Liquid Radiological Effluent Monitoring, and Radiological Environmental Surveillance of Inactive Waste Sites. LANL was not certain, however, how they were going to fix these problems. Two findings that LANL knew about, Best Available Technology Analysis for Liquid Waste Discharges and Outdoors Storage of Materials Contaminated with Radioactivity, were accepted as noncompliances. LANL did not know about three of the findings (i.e., Tritium Control in Liquid Waste Streams, Contamination Control of Outdoor Areas, and Radioactive Effluent/Onsite Discharge Reports). LANL staff indicated they were not certain how to correct the first two and that inadequate time was available to study the third.

Inactive Waste Sites (IWS)

Of the 13 IWS findings, LANL fully identified one, partially identified four, and eight were not identified. In cases where findings were fully or partially identified, root causes and corrective actions were not identified.

In some cases in which findings were not identified in the LANL Self-Assessment, the LANL Environmental Restoration Program and/or other LANL personnel appeared to be partially aware of the problems and indicated that procedures were being developed to address the problems. Examples of findings or specific deficiencies within broader findings that LANL indicated an awareness of, included the following: inconsistent fencing and posting of explosives areas; the need for a comprehensive sitewide hydrogeologic investigation; the lack of integration between the LANL Environmental Restoration Program and decommissioning and decontamination activities; and the incomplete removal of contaminated soil from inactive underground storage tank excavations.

National Environmental Policy Act (NEPA)

The findings of the NEPA Subteam were addressed to varying extents in the three self-assessment reports (LANL, LAAO, and AL). Generally, LANL identified all of the findings, at least partially, in their self-assessment (three of the findings were fully identified). Based on their self-assessment, LANL was the most fully aware of the problems found by the NEPA Subteam. LANL recognized (1) their noncompliance with DOE Orders and guidance relevant to DOE NEPA determinations in that projects had been implemented without an approved NEPA document, and (2) the inconsistency of their procedures and recordkeeping with DOE NEPA requirements. The other two findings were partially addressed by LANL. For example, the self-assessment report identified the need to initiate NEPA early in the planning process; it did not report, however, that the internal budget review documents or their use are inadequate for purposes of early planning and tracking of NEPA status in accordance with DOE 5440.1D and DOE 5100.3. The self-assessment also recognized the inadequacy of the 1979 sitewide Environmental Impact Statement (EIS) and LANL's resource data bases. The inadequacy of Environmental Assessments (EAs), however, especially in the analysis of indirect impacts, was not noted. The LANL Self-Assessment did not identify root causes or corrective actions.

6.5.2.2 Safety and Health

The Tiger Team Safety & Health (S&H) Subteam evaluated LANL's Self-Assessment Report and the process employed by the Laboratory to identify safety and health, and OSHA concerns. LANL directed the divisions and groups to utilize a graded approach that included tailoring the Performance Objectives & Criteria for TSAs (as used by the Tiger Team) into four levels (volumes) of objectives and criteria. The Laboratory distributed the volumes accompanied by a memorandum that provided direction as to which volumes applied to certain Laboratory facilities based on the type of operations and risk. The S&H Subteam evaluated the appropriateness of the four volumes and accompanying memorandum, and found them to be reasonable and appropriate.

The Subteam thought the assessment of safety and health issues was fairly comprehensive and that the Laboratory did a thorough job of looking at themselves; however, it appeared that some areas of the evaluation were general in nature. Much of the data had been extracted from previous audits and appraisals, as opposed to the approach of direct identification of concerns through an internal self-assessment process. A high percentage of the LANL staff were involved in the safety and health portion of the self-assessment and the S&H Subteam felt that these participants understood and considered themselves a part of the assessment process.

Most of the concerns identified in the LANL Self-Assessment Report were well organized in the Report and the S&H Subteam had little problem comparing the Tiger Team concerns with LANL identified concerns.

No corrective actions were identified by LANL, thus, the S&H Subteam was unable to evaluate LANL's comprehension and understanding of their concerns based on corrective actions.

The disciplines with the lowest percentages of either "fully" or "partially" identified in LANL's Self-Assessment Report, included Security Safety

Interface, Radiological Protection, and Fire Protection; with 63 percent, 66 percent, and 67 percent, respectively (see Table 6-3). LANL fully identified deficiencies in Aviation Safety, Worker Safety (OSHA), and Emergency Preparedness.

The Category I concern was fully (100%) identified and 80 percent of the Category II concerns, and 78 percent of the Category III concerns were either fully or partially identified in the LANL Self-Assessment.

6.5.2.3 Management

LANL's Senior Management Group formed a Task Force headed by the Deputy Associate Directors and comprised of other high-level managers, including a representative from a major site subcontractor, Johnson Controls World Services, Inc. (JCI), to consolidate information derived from the Laboratory divisions and group self-assessments. The Task Force evaluated the data against a comprehensive set of criteria including performance objectives and criteria; state, Federal, and local regulations; DOE Orders and directives; and best management objectives. The Task Force arrived at key findings that included management deficiencies. The Task Force analyzed the key findings for root causes through consensus opinion, as opposed to utilizing a formal root cause analysis. The Tiger Team Management Subteam noted that LANL did not form any groups specifically tasked to conduct a management self-assessment (e.g., management interviews, document reviews focusing on the identification of management deficiencies). Many of the management findings resulted from the process of rolling up findings into key findings that identified deficiencies in management programs and systems.

LANL identified approximately 70 percent of the findings identified by the Tiger Team Management Subteam; leaving 30 percent not identified (see Table 6-3). The Laboratory has a good comprehensive of their deficiencies related to their public outreach programs and the lack of internal communication of ES&H information and guidance to employees. In other instances, however, where the findings were judged to be only partially covered, only the more obvious deficiencies were globally cited and the critical aspects were not included or addressed. The Management Subteam concluded that LANL is not wholly aware of the magnitude and depth of their management problems. This was especially true for the findings related to "oversight" where it was apparent to the Management Subteam that LANL lacks a mature understanding of "oversight" in general.

6.5.2.4 Self-Assessment

The Tiger Team Self-Assessment Task Group reviewed the LANL Self-Assessment Report and found that LANL had fully identified three of the self-assessment findings, partially identified two, and did not address one of the self-assessment findings.

SA-7 Los Alamos National Laboratory Self-Assessment Report

The Los Alamos National Laboratory Self-Assessment Report does not include the self-assessment results from all of the organizations and does not adequately describe how the generalized findings apply to specific Laboratory facilities.

Discussion

Approximately half of the organizations did not supply comprehensive self-assessment information to the coordinating group which compiled the LANL Self-Assessment Report (LA-12200-MS). This required generalizations of the available data across the entire Laboratory. The available data consisted of nearly 45,000 findings from an early Laboratory-wide Occupational Safety and Health Act (OSHA) review, the results of all appraisals of Laboratory functions conducted for about 3 years prior to the self-assessment, and self-assessment documents produced by the other half of the organizations who met the reporting date and the informal introduction of data from a variety of sources.

Self-assessments were completed by two subcontractors to the Laboratory: Johnson Controls World Services, Inc. (JCI) and Mason & Hanger (M&H). Both were formally completed about 1 month after the Laboratory report was completed; yet, the JCI findings were introduced into the Laboratory report through informal means while none of the M&H self-assessment information was included. The security findings (M&H provides the Laboratory security function) were derived from an early audit of the security function. This illustrates the informality of approach in gathering some of the data for the assessment and raises the bigger question as to which organizational reports made the final report.

It should also be noted that the organizational self-assessments were done in a variety of methods. Some relied on an assembled team of balanced expertise from within the division while others were produced by the Division Leader with the aid of one or two individuals and minimal input from subordinate managers and staff.

The report consists of about 770 findings which were derived from the input data noted above. These 770 findings are, in most cases, very generally stated in a candid manner. There are no positive findings in the report, however, the introductions to the various sections in the report describe some accomplishments. The 770 findings are, in turn, collected into 17 well thought out key findings. Five root causes were derived. The report states that a cause/effect analysis was used to derive the root causes with no further elaboration.

With the continuous roll-up process, the report does not indicate where in the Laboratory the 770 findings apply, and there is no description of which of the 770 findings lead to particular key findings. This information is included in Corrective Action Plans which are in a formative state and in a very complete computerized data base. This data base was used rather than the report as the primary source of findings to compare to Tiger Team findings.

The early draft Corrective Action Plans include descriptions which in most cases indicate a good understanding of the problems. The action steps and schedule data are in an early stage of development, and there are no cost data.

Self-Assessment

This finding is identified in the LANL Self-Assessment as Key Finding 7 and as Finding MG.2-1.

6.6 EVALUATION OF THE DEPARTMENT OF ENERGY LOS ALAMOS AREA OFFICE (LAAO)

LAAO completed a separate office-wide ES&H Self-Assessment, in September 1991, in preparation for the Los Alamos Tiger Team. This self-assessment was conducted by a special task group of LAAO staff. In conducting this self-assessment, LAAO participated with AL in AL's assessment of LANL. The results of the assessment of LANL were used as one source of data to evaluate LAAO's management performance. Other data used for the internal LAAO assessment included "prior functional appraisals, incident reports, performance indicators, observations, and outside assessments."

The LAAO self-assessment effort involved approximately half the LAAO office staff assigned to a special task force comprised of four teams that evaluated LAAO's performance against the following criteria: past Tiger Team findings at AL (with associated Area Offices); LAAO roles and responsibilities; results of a former "external" contractor assessment of LAAO; and the current Tiger Team Performance Objectives. Interviews of nearly the entire staff, supplemented with response information to survey questionnaires (submitted to organizations external to LAAO as well as to LAAO staff) supplemented the data discussed above. The results of the self-assessment are reported in the LAAO Self-Assessment Report, "Assessment of Environmental, Safety, and Health Practices at Los Alamos" (September 1991).

The LAAO self-assessment report was not evaluated by the Tiger Team as a stand-alone report due to the small size of the office and the fact that LAAO is a line organization of AL. The Tiger Team felt that the effort conducted by LAAO was proactive and a valuable contribution to the future management of the office. Concerns do remain, however, and are identified below in the self-assessment findings. In addition, the LAAO self-assessment process did not identify important contractual problems with one of its prime contractors, the Los Alamos County Fire Department, nor did it identify the absence of strategic planning processes (see Findings MF-23 and MF-3).

LAAO does not have an institutionalized self-assessment program. It is anticipated by AL and LAAO that LAAO self-assessment efforts will be included in a future AL institutional self-assessment plan.

In Table 6-4, the Tiger Team findings and concerns are compared with those identified in the LAAO Self-Assessment Report to determine which findings and concerns were fully or partially identified or not addressed at all.

TABLE 6-4
COMPARISON OF LAAO SELF-ASSESSMENT REPORT FINDINGS AND CONCERNS

Area	Fully Identified	Partially Identified	Not Identified
TSA	8	10	10
Environmental	3	2	1
Management	3	5	2
Self-Assessment	1	0	4
TOTAL	15 (30%)	17 (35%)	17 (35%)

SA-8 Los Alamos Area Office Implementation of Management Systems

Los Alamos Area Office has not implemented the management systems which facilitate an effective self-assessment program.

Discussion

AL has stated that LAAO will be included as part of the AL self-assessment program. Further, and less clear at this time, is the degree to which LAAO activities will be incorporated into AL self-assessment management systems vis-a-vis developing their own. However, the AL Self-Assessment Program has neither been finalized in concept, much less institutionalized (see Finding SA-11), nor have final decisions been made on the form of many of the management systems. Whatever form the AL Self-Assessment Program takes, LAAO will be required to establish additional management systems to effectively interface with AL and LANL in the self-assessment process and to contribute effectively to fulfillment of AL's, LAAO's, and LANL's ES&H responsibilities. LAAO also needs to establish formal procedures for implementation of management systems, whether they rely directly on AL systems, use LAAO systems supported by AL, or develop their own. Concerns relative to self-assessment at LAAO include the following:

- Resolution of the roles and responsibilities needed for the LAAO Self-Assessment Program to aid in providing oversight of LANL;
- The lack of a documented training program for the self-assessment process and management systems;
- Whether LAAO will have their own tracking system for findings or access the newly developing AL system, and the need to implement procedures for whichever path is chosen;
- The lack of a tracking system for corrective action plans;
- The lack of documented trending and lessons-learned processes;
- The apparent lack of well-defined reporting responsibilities and systems; and
- The lack of a timely response by LAAO to LANL corrective action certification (see Finding SA-3).

References

- MF-5, MF-13, MF-18, MF-22, and MF-23.

Self-Assessment

This finding was identified in Part 3 - Management and Organization Assessment of the LAAO September 1991 Self-Assessment (conducted in preparation for the LANL Tiger Team) as the third Key Finding (Discussion: Management Systems) and as the first Key Finding (Discussion: Organization and Administration).

SA-9 Los Alamos Area Office Communication on Self-Assessment

Los Alamos Area Office management has not provided adequate communication and/or training to all of the Area Office employees on self-assessment.

Discussion

LAAO management, like AL, selected a team approach to conduct its ES&H Self-Assessment. The assessment was completed in September 1991, just before the Tiger Team's arrival. According to LAAO management, about 25 staff members performed active roles in the self-assessment process. This represents approximately 50 percent of the LAAO staff. In addition, many of LAAO's staff were interviewed as part of the self-assessment process.

The Task Group conducted crosscutting interviews at LAAO to measure the adequacy of LAAO management's efforts to communicate the self-assessment culture and its objectives. This process revealed, that of the nine employees interviewed, three were confused about self-assessment culture. Furthermore, some employees indicated that they felt threatened (i.e., vulnerable) by the process, indicating a lack of communication and/or training in self-assessment culture to provide employees with a better understanding of its objectives.

Self-Assessment

This finding was not specifically addressed in the LAAO Self-Assessment; however, a general finding on inadequate communications was cited.

SA-10 Los Alamos County Fire Department

The Los Alamos County (a prime management and organization contractor to the Los Alamos Area Office for the fire protection services for the U.S. Department of Energy and Los Alamos National Laboratory, and the community) has not developed a self-assessment program plan. In addition, Los Alamos County prepared an inadequate self-assessment report.

Discussion

LAAO has a contract with the Los Alamos County to operate five community fire stations to serve the Laboratory's and the Los Alamos community's fire protection needs. The contract is "not for profit" and has been in existence since 1989. LAAO and the county are negotiating a new 5-year, $55 million contract to begin calendar year 1992.

The Task Group discovered that the Los Alamos County had attempted to prepare a self-assessment report of their operations by compiling data sheets of individual deficiencies. There was neither an indication of management review, nor were key findings and root causes developed. In addition, the county did not prepare a self-assessment plan for the purpose of establishing a self-assessment program. The Tiger Team felt the lack of a good self-assessment in fire protection was particularly important to cite because of the numerous deficiencies found in these operations (see Finding MF-23) and because the county had the greatest opportunity to benefit from a good self-assessment.

Interviews with the LAAO management revealed that LAAO had not formally informed the county of the need to perform either of these activities (the Tiger Team noted that LAAO had not identified this deficiency in their self-assessment report). The Tiger Team has cited LAAO in a separate finding regarding the lack of an effective communications system which is supported by this issue (see Finding SA-9).

Self-Assessment

This finding was not included in the LAAO Self-Assessment.

6.7 EVALUATION OF THE DEPARTMENT OF ENERGY FIELD OFFICE, ALBUQUERQUE

AL completed their first ES&H Self-Assessment in April 1991. This self-assessment was conducted as a special one-time effort in preparation for the Sandia National Laboratory (SNL) Tiger Team. The SNL Tiger Team evaluated the AL Self-Assessment Report and reported a number of self-assessment findings in the SNL Tiger Team Report.

In an early response to the issues raised by the SNL Tiger Team, AL conducted a second self-assessment in preparation for the Los Alamos Tiger Team. This assessment was again conducted by a special task group of AL staff. Due to time constraints, AL performed a detailed assessment of the activities of only 4 of its 16 management elements (sites/offices), including the two most relevant to the LANL Tiger Team (LANL and Ross Aviation); other management elements will be completed later. The effort involved approximately 60 AL employees assigned to 3 subteams: the "ES&H Technical Assessment" sub-team; which fed data to the "Management & Organization Assessment" sub-team; whose findings in turn fed the "Corrective Actions" subteam. The results of the assessment of the management elements were used as part of the data for the assessment of AL's management performance. Other data used for the internal AL assessment included "prior functional appraisals, incident reports, performance indicators, observations, and outside assessments." These data, at both the "technical" and "management" level, were supplemented by response information to questionnaires submitted to external organizations and personnel within AL. Followup interviews were used in certain instances. The results of this self-assessment are reported in the AL Self-Assessment Report, Volume I, September 1991. Volume II of the self-assessment report contains data supporting the methodology used, while Volume III contains detailed information for each management element evaluated. Volume III exists for each of the four management elements evaluated. Volume III, Book "N," for AL proper, has not been completed. Since it will compile data from all 16 management elements, its publication will await completion of the self-assessments of the remaining 12 management elements.

The LANL Tiger Team has identified some continuing concerns about the results reported in the AL September 1991 Self-Assessment Report, which are reported in the self-assessment findings below. In terms of implementing a permanent self-assessment program, AL has neither formally identified the organizational element, nor level, that will have responsibility for the self-assessment program, nor are there formal policies or procedures to adequately document a self-assessment program. A task group has completed a study on the self-assessment program placement within the organization and recommended that AL use two existing divisions to formulate the new self-assessment structure. A finding on the establishment of an institutional self-assessment program is reported below.

A significant concern of the LANL Tiger Team is the lack of formal guidance from DOE-Headquarters Defense Programs on the self-assessment process. This delay has complicated both LANL's and AL's ability to fully institute a formal, ongoing self-assessment program.

In Table 6-5, the Tiger Team findings and concerns are compared with those identified in the AL Self-Assessment Report to determine which findings and concerns were fully or partially identified or not addressed at all.

TABLE 6-5
COMPARISON OF AL SELF-ASSESSMENT REPORT FINDINGS AND CONCERNS

Area	Fully Identified	Partially Identified	Not Identified
TSA	3	8	17
Environmental	2	0	38
Management	1	2	3
Self-Assessment	1	1	3
TOTAL	7 (23%)	11 (37%)	12 (40%)

6.7.1 Evaluation of Self-Assessment Program

SA-11 U.S. Department of Energy Field Office, Albuquerque Self-Assessment Program

The U.S. Department of Energy Field Office, Albuquerque has neither completed nor implemented a formal institutionalized self-assessment program, nor formally identified an organization(s) which will be responsible for conducting the self-assessment program.

Discussion

The Secretary's guidance of July 31, 1990, outlines the essential elements of an effective self-assessment program as it applies to all elements of the DOE system, while SEN-6D-91 directs various elements of DOE to establish "self-assessment" organizations and programs for conducting independent self-assessments of their activities by September 30, 1991. AL has not formally complied with these requirements through the establishment of a comprehensive, institutionalized self-assessment program which has been approved by the lead Program Secretarial Officer (PSO), nor has the lead PSO (DP) provided self-assessment guidance to AL. AL has also not, at this time, designated an organization(s) with overall responsibility for conducting the AL Self-Assessment Program as described by SEN-6D-91.

In partial response to the Secretary's guidance, AL has conducted two self-assessments. These were performed in preparation for the Sandia National Laboratory and LANL Tiger Team Assessments, respectively. In conjunction with the latter (AL Self-Assessment, September 1991) AL prepared a prototype Self-Assessment Program. AL anticipates that the program they ultimately institutionalize will draw upon that prototype, though AL admits that change is possible.

AL also chartered a Process Management Team (PMT) to evaluate how the AL self-assessment organization should be structured and where in the AL organization it should be located. This PMT recommended to AL management in late September 1991 that the AL ES&H self-assessment functions be contained within the Operations Quality Division (OQD) under the Assistant Manager for Environment, Safety & Health. The self-assessment responsibility within the division would be an addition to its current responsibilities. The PMT also recommended that the Business Management/Administrative self-assessment activities be located in the Management Review Division (MRD), with almost the same functions as the OQD for ES&H Self-Assessments. Remaining self-assessment functions are anticipated to fall within the responsibility of the MRD. AL management has drafted documentation to formally make these organizational changes; implementation of the changes awaits further guidance from the PSO.

Thus, while there are several elements which can contribute to a good ES&H Self-Assessment Program in various stages of development at AL (including an ES&H appraisal program, a MRD which is responsible for evaluating all of AL's organization functions and systems, and a newly developing overall tracking system), the fact remains that there is no formal charter, no formal operating procedures, no formal organizational changes, and no identification of specific employee responsibilities for an ES&H self-assessment organization currently in existence at AL.

Concerns include the following:

- While the Secretary's July 1990 memorandum and SEN-6D-91 provide guidance for the initiation of a self-assessment effort at the Field Office, further guidance from the PSO which would foster uniform efforts among all DP Field Offices still has not been received (see Finding SA-15);

- AL has not prepared and submitted a self-assessment plan to DP;

- AL has not formally put in place an organizational structure which will be responsible for institutionalizing the self-assessment process and culture; they have prepared draft tasking memoranda for the proposed new organizational responsibilities;

- DP has apparently advised AL not to implement the Corrective Action Plan developed in response to the Sandia National Laboratory Tiger Team evaluation of the AL Self-Assessment Program. Consequently, AL has delayed implementation of their reorganization pending receipt of DP guidance; and

- The proposed use of two existing divisions within AL, with continuing responsibilities other than ES&H, the OQD and the MRD, to establish the AL self-assessment organization(s) responsible for self-assessment raises two concerns. The first concern is the potential for conflict of interest between office-wide assessments and other responsibilities for personnel in these divisions. The second concern is that this concept does not provide for an organizational focal point for a comprehensive self-assessment program, introducing the possibility for duplication of effort and potential confusion on roles and responsibilities.

Self-Assessment

This finding was identified in the AL September 1991 Self-Assessment (in preparation for the LANL Tiger Team) as Key Finding #8 (Institutional Self-Assessment).

SA-12 U.S. Department of Energy Field Office, Albuquerque Implementation of Management Systems

The U.S. Department of Energy Field Office, Albuquerque has not yet fully implemented the management systems which facilitate an effective environment, safety, and health (ES&H) self-assessment program.

Discussion

AL has produced a generally good self-assessment report using previous audits, reviews, and appraisals coupled with various existing management systems. Thus, while AL has parts and pieces of many management systems in place, they have not implemented all required management systems. Most important, they do not have in place the necessary mechanisms for evaluating and achieving excellence in their ES&H programs. The absence of fully implemented systems is also in line with the absence of a formal, institutionalized self-assessment program. Formal implementation of management systems is required to develop a reliable base for an effective ongoing self-assessment program.

AL has identified the lack of full implementation of all required ES&H management systems at the various DOE sites it is responsible for, in particular LANL, as well as at AL, as a key finding in their September 1991 Self-Assessment Report. They indicate that only 3 of the 14 required systems are "satisfactorily" implemented at AL; unpublished information indicates these are SEN-7A reporting requirements, Contract Performance Measurement, and Issues Management. The remaining 11 systems were rated as either marginal, or in one case, deficient by AL. The Task Group specifically identified the following as not being <u>fully</u> in place with formal implementing procedures: a comprehensive performance indicator system; a system for tracking vulnerabilities and their associated risks; a system to ensure the <u>timely</u> independent evaluation and closeout of corrective actions; establishment of ES&H goals and objectives against which ES&H performance can be measured within AL; trending of ES&H issues (per SEN-29-91 and the Secretary's July 31, 1990 guidance); and a comprehensive lessons-learned program. In addition, there is a lack of a formal training program for AL employees in the self-assessment process and many of the self-assessment management systems.

AL is working on developing, implementing, or upgrading a number of systems, including the following:

- A Field Office tracking system for internal and external audits, appraisals, and reviews for all facilities/sites under its responsibility;
- A formal training program on the self-assessment process;
- Management systems to identify, clarify, and control the interactions between AL, LAAO, and LANL on self-assessment-related activities;
- Upgrading the ES&H appraisal system to ensure timely completion and transmittal of all appraisal reports;

- Strengthening the project management control system at AL for both environmental restoration and waste management programs; and.

- A performance indicator system to be used by AL and all facilities/sites under AL's cognizance.

References

- MF-13 and MF-17.

Self-Assessment

This finding was partially addressed in the AL September 1991 Self-Assessment (in preparation for the LANL Tiger Team) as Key Finding #3 (ES&H Management Systems) and as Key Finding #6 (Training).

SA-13 The U.S. Department of Energy Field Office, Albuquerque Communication on Self-Assessment

The U.S. Department of Energy Field Office, Albuquerque management has not provided adequate communication and training to all of the Field Office employees on self-assessment.

Discussion

AL's management selected a team approach to conduct its self-assessment. This effort included questionnaires, limited employee interviews, previous audits, appraisals, and reviews. This assessment was completed in August 1991. To determine the extent of employee knowledge and involvement in the self-assessment culture, the self-assessment Task Group conducted an organizational vertical slice of an Assistant Manager's Office in the AL. The Task Group selected an Assistant Manager, Division Director, two Branch Chiefs, and four staff personnel for interviews. These interviews were also conducted to determine whether the self-assessment culture had been adequately communicated down through the organization to all employees.

The results indicated that these personnel had very little awareness of the ES&H Self-Assessment that AL had completed in preparation for the DOE Tiger Team in September 1991. Furthermore, none had either read the AL report, and only one had limited involvement in the self-assessment. No one was aware of any action items that might have resulted from the review.

The personnel interviewed indicated that they were currently involved in the AL's Chief Financial Officers-Business Management Systems Self-Assessment Program that was initiated on September 23, 1991. This self-assessment is being handled as a special task group effort under the Assistant Manager for Management and Administration.

In summary, AL had not effectively communicated the ES&H self-assessment culture and the self-assessment process to its employees. In addition, AL has not provided training on the self-assessment culture or process.

Self-Assessment

This finding was not addressed in the AL Self-Assessment.

6.7.2 Evaluation of the Department of Energy Field Office, Albuquerque/Los Alamos Area Office's Pre-Los Alamos National Laboratory Tiger Team Self-Assessment Report

SA-14 U.S. Department of Energy Field Office, Albuquerque Self-Assessment Report

The U.S. Department of Energy Field Office, Albuquerque pre-Los Alamos National Laboratory Tiger Team Self-Assessment Report (and associated process) do not fully meet the Secretary's guidance for a comprehensive self-assessment program.

Discussion

The September 1991 AL pre-LANL Tiger Team Self-Assessment is the second pre-Tiger-Team Self-Assessment performed by AL (the April 1991 pre-Sandia Tiger-Team Self-Assessment was the first). AL performed the second self-assessment on a relatively short turnaround to address many of the deficiencies identified by the Sandia Tiger Team in the first self-assessment report. Consequently, many of the same findings are identified.

The principal Sandia Tiger Team findings on the April 1991 AL Self-Assessment Report were that it was essentially a management review of AL's own ES&H management ability, was not comprehensive in scope, did not evaluate the contractor's activities, did not provide sufficient detail on how they performed their root cause analysis, did not address AL's relationship with DOE-Headquarters (HQ) (principally Defense Programs (DP)), and did not provide cost data with their corrective action plan. The current (September 1991) report addresses the first four issues. It involves a detailed assessment of the activities of four of its contractors (including the two most relevant to the LANL Tiger Team: LANL and Ross Aviation) and is based on "prior functional appraisals, incident reports, performance indicators, observations, and outside assessments." This was supplemented by questionnaires to selected external organizations and personnel within AL. Followup interviews were used in certain instances. These provided the technical performance data which support the self-assessment findings.

There still remains concern, however, about the lack of a full evaluation of AL's ES&H relationship with DOE-HQ and the lack of detailed resource data for the corrective action plan. In general, what is presented in the report are very brief statements that the only resources required are full-time equivalents and that <u>many</u> of the actions will be supported by existing or planned staff. No mention is made of impact, if any, on existing priorities, or how the remaining actions will be supported, or where the staff will come from when the need does not fall within existing/planned staffing levels. The assessment did not effectively involve all components of the AL organization (i.e., not all the Assistant Managers have reviewed the AL Self-Assessment for either content or applicable corrective action items; see Finding SA-13). The AL key finding on their Business Management Systems (AL Finding #3) is not clear. The published report identifies 14 business management systems, required by DOE, which AL apply against their management elements. This report states that only three of the management systems <u>at AL</u> are rated satisfactory, but does not identify which three they are. The report also does not identify whether <u>all</u> 14 of the systems are applied internally at AL (see discussion in overview on status on the complete AL Self-Assessment

Report). Finally, the Corrective Action Plan for Finding #3 does not clearly flow from the finding (i.e., it is not clear that all the business management systems identified by AL as deficient or marginal are addressed in the Corrective Action Plan).

LAAO chose to conduct a limited, independent self-assessment. This assessment relied on AL for much of its appraisal and audit data, plus internal questionnaire and interview data from nearly all of the LAAO staff. This report will be a good and effective tool for LAAO. However, a concern does remain regarding communications within LAAO with respect to the self-assessment culture (see Finding SA-9). The Task Group did not fully evaluate this report against the Secretary's guidance because of the relatively small size of the organization and the fact that it is a direct line organization of AL.

To date, neither AL nor LAAO has included self-assessment in the strategic planning process.

References

•MF-3, MF-11, MF-17, MF-18, MF-22, MF-23, and MF-31; •NEPA/CF-1, NEPA/CF-2 NEPA/CF-3, NEPA/CF-4, and NEPA/CF-5.

Self-Assessment

Not Applicable.

6.8 EVALUATION OF PROGRAM SECRETARIAL OFFICES—DEFENSE PROGRAMS (DP), ENERGY RESEARCH (ER), ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT (EM), AND NUCLEAR ENERGY (NE)

SA-15 U.S. Department of Energy Headquarters Guidance

U.S. Department of Energy (DOE)-Headquarters principal Program Secretarial Offices for Los Alamos National Laboratory have not provided the necessary guidance to the DOE Field Office, Albuquerque; Los Alamos Area Office; and Los Alamos National Laboratory to facilitate institutionalizing self-assessment programs and independent self-assessment organizations in the field as required in Secretary Watkins' self-assessment guidance of July 31, 1990, and in SEN-6D-91.

Discussion

Secretary Watkins' July 31, 1990, memorandum provided self-assessment guidance to Program Secretarial Officers (PSOs) directing that the lead PSO (i.e., Defense Programs (DP)) "should consult with and involve the other PSOs as appropriate" to provide direction on self-assessment. The Secretary's guidance also states that PSOs should have integrated self-assessment plans for each facility that they manage and that a process be established that would involve contractors, Field Offices, and Program Offices to facilitate followup on action plans. SEN-6D-91 requires that Memoranda of Agreement (MOA) and Tri-party Agreements be negotiated among the principal PSOs and the Field Offices to define roles, responsibilities, and reporting relationships, and conflict resolution procedures. These documents would contain agreements on self-assessment. To date, there have been no negotiations or executed agreements among DP, Environmental Restoration and Waste Management (EM), Energy Research (ER), Nuclear Energy (NE), and AL. Thus, AL, LAAO, and LANL have not received the direction and guidance that would be contained in these documents, to facilitate making appropriate decisions and taking timely actions for developing and implementing self-assessment program plans that would be coordinated with the self-assessment requirements of the principal landlords, and be integrated with the various line self-assessment programs.

LANL has chosen not to wait for additional guidance from DOE-HQ and has proceeded to develop and complete its own Self-Assessment Program Plan and its implementation, relying principally on the July 30, 1990, guidance and SEN-6D-91. The Laboratory submitted a Self-Assessment Program Plan to AL; however, it has not been approved by AL or DP. LANL has been cited by the Task Group with a finding for not having an institutionalized self-assessment program in place (see Finding SA-1).

AL and LAAO have not made as much progress as LANL towards institutionalizing a self-assessment program nor have they established an independent self-assessment organization (see Findings SA-11 and SA-14). The Task Group was informed by AL that DP has directed AL and LAAO to wait for more specific DP direction pending the guidance being developed by the Interoffice Self-Assessment Task Force.

Self-Assessment

Not applicable.

APPENDICES

APPENDIX A

TIGER TEAM ASSESSMENT PERSONNEL AND BIOLOGICAL SKETCHES

Appendix A-1

Biographical Sketches of Tiger Team Assessment Team Leader and Team Leader Staff

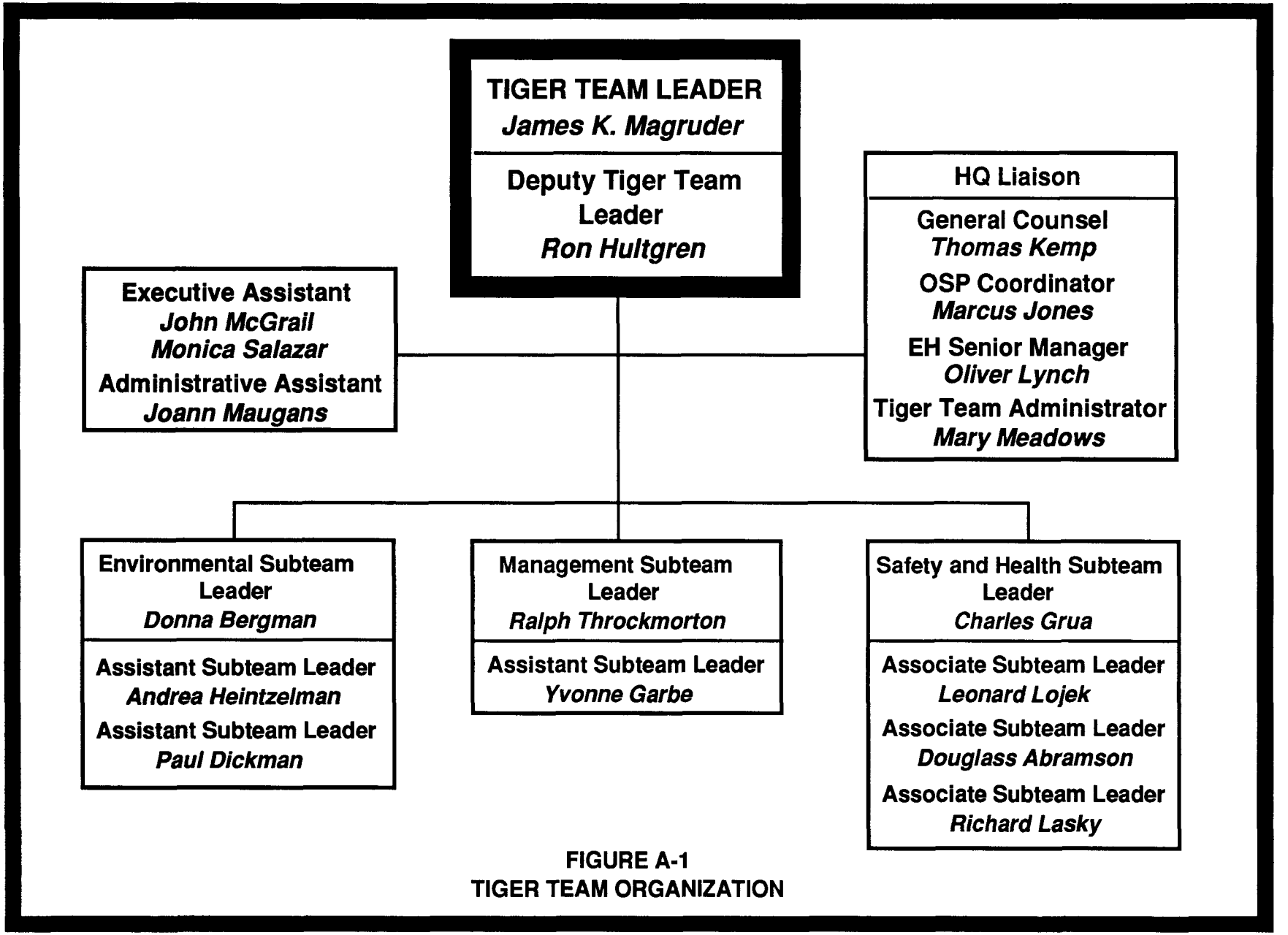


FIGURE A-1
TIGER TEAM ORGANIZATION

NAME: James K. Magruder

AREA OF RESP: Tiger Team Leader

ASSOCIATION: U.S. Department of Energy Field Office, Nevada

EXPERIENCE: 27 years

- U.S. Department of Energy Field Office, Nevada
  - Assistant Manager for Operations; responsible for policy, plans and procedures for operational control of all Nevada Test Site (NTS) activities and manages a federal organization having responsibility for test operations, safeguards and security, verification control technology, environmental restoration and waste management, and NTS operations. Serves as the senior federal official during execution of nuclear weapons tests.
  - Director, Test Operations Division; responsible for technical, managerial, and administrative direction for ensuring the safe, successful conduct of the nation's underground nuclear test program.
  - Director, Nuclear Systems Division; responsible for technical, managerial, and administrative direction for nuclear explosive safety, test treaty verification, Aerial Measurements System, Nuclear Emergency Search Team, and emergency preparedness.
- EG&G Energy Measurements, Inc.
  - Scientific Specialist; responsible for design of specialized equipment for timing and firing for detonation of nuclear tests and diagnostic data collection.
  - Senior Engineer; responsible for designing and implementing timing and control system for detonating nuclear test devices.
- Boeing Corporation
  - Associate Engineer

EDUCATION: M.B.A., University of Nevada-Las Vegas, 1971
B.S., Electrical Engineering, University of Washington, 1967

NAME: Ronald O. Hultgren

AREA OF RESP: Deputy Tiger Team Leader

ASSOCIATION: U.S. Department of Energy Field Office, Oak Ridge

EXPERIENCE: 26 years

- U.S. Department of Energy Field Office, Oak Ridge - Uranium Enrichment
  - Deputy Assistant Manager; provides business implementation management for production of enriched uranium
  - Division Director; management of gas centrifuge development for enriching uranium
- Continuous Electron Beam Accelerator - DOE/OR
  - Project Manager; provides on-site management of CEBAF during establishment of project
- University of Virginia
  - Lecturer; Aerospace structures and applied mechanics
  - Senior Research Staff; materials and dynamics research of high-speed rotating equipment
- Lockheed Missiles & Space
  - Senior Research Staff; evaluated vibrational dynamics of complex space structures with nonlinear properties
- Sandia Corporation (National Laboratory)
  - Member, Tech. Staff; evaluated earth penetration by aerospace nuclear power supplies

EDUCATION: D.Sc, University of Virginia, 1967
M.S., T&AM, University of Illinois, 1962
B.S., M.E., Marquette University, 1960

OTHER: Member, Tau Beta Pi, Pi Tau Sigma, Pi Mu Epsilon
Board of Directors, WATTEC

NAME: Thomas H. Kemp

AREA OF RESP: Legal Counsel to Tiger Team

ASSOCIATION: U.S. Department of Energy

EXPERIENCE: 22 years

- U.S. Department of Energy and predecessor agencies (1974 to present)
  - Office of the General Counsel. Conducted litigation arising under various statutes including the Emergency Petroleum Allocation Act of 1973; the Natural Gas Act; and the Freedom of Information Act.
- U.S. Environmental Protection Agency (1970-73)
  - Served in the Pesticides Division of the General Counsel's office conducting administrative and appellate court litigation concerning the registration of various economic poisons under the Federal Insecticide, Fungicide and Rodenticide Act.
- U.S. Department of Agriculture (1969-70)
  - Served in the Regulatory Division of the General Counsel's Office conducting administrative and appellate court litigation under the Packers and Stockyart Act and the Federal Insecticide, Fungicide and Rodenticide Act.

EDUCATION: J.D., Case Western Reserve Univerity, Cleveland, OH
B.A., Lehigh University, Bethlehem, PA

OTHER: Bar Admissions
State of Ohio, District of Columbia, U.S. Supreme Court, various circuit courts of appeals and district courts

NAME: Joann L. Maugans

AREA OF RESP: Administrative Assistant to Tiger Team Leader

ASSOCIATION: U.S. Department of Energy Field Office, Nevada

EXPERIENCE: 30 years (Federal Civil Service)

- U.S. Department of Energy Field Office, Nevada - Office of Assistant Manager for Operations
  - Secretary to the Assistant Manager for Operations; providing administrative and stenographic support in an organization having operational control for the Nevada Test Site and responsibility for test operations, safeguards and security, verification control technology, environmental restoration and waste management, and Nevada Test Site operations.
- HQ Pacific Air Forces, Hickam AFB, HI
  - Secretary to the Director of Operations; provided administrative and stenographic support in an organization having responsibility for all Air Force operations functions throughout the Pacific and Far East.
- Cannon AFB, NM
  - Secretary to the Commander, Communications Squadron; Base Chaplain; and Base Supply Officer; provided administrative and stenographic support in the above organizations having responsibility for providing these services at Cannon AFB, NM.
- Commander in Chief Pacific, Camp Smith, HI
  - Secretary to the Media and Community Affairs Officers in the Public Affairs Office; provided administrative and stenographic support in an organization having responsibility for all contact with the media and public, in addition to supporting the visits of the President and Vice President of the United States, Secretary of State, and other U.S. and foreign dignitaries.
- Defense Contract Audit Agency, Minneapolis, MN; Bangkok, Thailand; and Los Angeles, CA
  - Secretary to the Manager; provided administrative and stenographic support and performed desk audits in an organization having responsibility for auditing Department of Defense contracts.

NAME: John M. McGrail

AREA OF RESP: Executive Assistant to Tiger Team Leader

ASSOCIATION: U.S. Department of Energy Field Office, Nevada

EXPERIENCE: 20 years

- U.S. Department of Energy Field Office, Nevada
  - ES&H Coordinator in Office of Assistant Manager for Operations (AMO); responsible for internal coordination of ES&H activities of five divisions reporting to the AMO (Nevada Test Site Office, Test Operations Division, Environmental Restoration and Waste Management Division, Safeguards and Security Division, and Verification Management Division) and for external coordination with DOE/HQ, DOE/NV contractors, and NTS user organizations.
  - Chief, Operations Management Branch, Operations Coordination Center, Nevada Test Site; responsible for direction of professional and technical staff conducting routine, day-to-day coordination of NTS operations, and for planning, preparation, and execution of underground nuclear tests.
  - Project Engineer, Test Construction Branch, Nevada Test Site; responsible for planning, design, construction, and inspection of all construction and field assembly in preparation for underground nuclear tests.
- Civil Engineering and Construction Management
  - Eight years of progressively responsible experience as a professional engineer and construction project manager, including design, site layout, inspection, and contract management.
- U.S. Navy - Served on two nuclear submarines as:
  - Reactor Controls Officer
  - Damage Control Officer
  - Weapons Officer

EDUCATION: B.S., Civil Engineering, Cornell University, 1972
U.S. Navy, Nuclear Power Training, 1973

OTHER: Commander, U.S. Naval Reserve
Naval Reserve Engineering Duty Officer
Commanding Officer, Naval Reserve Unit, Shore Intermediate Maintenance Activity, San Diego 1119
Registered Professional Engineer - Nevada

NAME: Mary Meadows

AREA OF RESP: Tiger Team Administrator

ASSOCIATION: U.S. Department of Energy, Office of Safety Appraisals

EXPERIENCE: 32 years

- U.S. Department of Energy
  - Supervisory Appraisal Specialist. Responsible for the overall administrative planning and conducting of Tiger Team Assessments, Technical Safety Appraisals, Management Appraisals, Nuclear Safety Program Appraisals, Design Reviews, and Comprehensive Appraisals. Responsible for the overall coordination of production draft reports in the field and final publication of reports at Headquarters, DOE.
  - Staff Assistant, Office of Environmental Compliance and Overview. Recommended specific changes in administrative procedures for the purpose of increasing efficiency, eliminating unnecessary details, and providing needed management control.
  - Staff Assistant, Office of Bio-Medical and Environmental Research: Obtained and communicated information to organizations and individuals inside/outside of the Agency on a wide range of Agency organization, personnel and procedures.
  - Staff Assistant, Office of the Commissioner, USAEC.
  - Administrative Assistant, Office of the Assistant General Manager for Research and Development, USAEC.

- Other Related Experience
  - Administrative and conference planning responsibilities within the USAEC, ERDA, and DOE.

EDUCATION: Numerous work-related courses and workshops at various colleges, training centers, and American Management Association.

OTHER: Member, U.S. Delegation to Disarmament Conference, Geneva, Switzerland, USAEC
Recipient of Federal Government Awards for superior performance

Appendix A-2

Biographical Sketches of Environmental Subteam Members

NAME: Donna A. Bergman

AREA OF RESP: Environmental Subteam Leader

ASSOCIATION: U.S. Department of Energy, Office of Environmental Audit

EXPERIENCE: 15 years

- U.S. Department of Energy
  - Environmental Audit Team Leader for Assessment of Environmental Conditions at the Rocky Flats Plant and Environmental Audit of Nevada Operations Office facilities in Las Vegas, Nevada and Santa Barbara, California.
  - Environmental Subteam Leader for Tiger Team Assessments of Nevada Test Site, Lawrence Livermore National Laboratory, Paducah Gaseous Diffusion Plant, Argonne Illinois Site, and Sandia National Laboratories, Albuquerque.
  - Team Leader for Environmental Survey Prioritization and preparation of the Final Survey Summary Report.
  - Assistant Team Leader for the Environmental Surveys of 13 DOE facilities. Included planning activities in preparation for the onsite Survey, team management during the onsite Survey, guidance in report preparation, and sampling and analysis responsibilities.
  - Environmental Compliance Coordinator between Idaho Operations Office and DOE Headquarters, and Oak Ridge Operations Office and DOE Headquarters for purposes of environmental compliance and oversight in regards to applicable environmental requirements.

- Department of Commerce, Economic Development Administration
  - Senior Environmental Protection Specialist responsible for the development and implementation of environmental policy and directives. Provided guidance to regional officers for interpretation of environmental regulations as they related to economic development strategies.

- Department of Interior, Bureau of Land Management
  - Natural Resource Specialist/Planning Coordinator responsible for providing guidance, assistance, and quality control for multiple-use planning. Served as Team Leader for the preparation of comprehensive multiple-use plans.

- Department of Agriculture, Soil Conservation Service
  - Soil Conservationist

EDUCATION: Graduate Studies, Environmental Planning, University of Virginia
B.S., Plant Resources Management, University of Maryland

NAME: Andrea J. Heintzelman

AREA OF RESP: Assistant Environmental Subteam Leader

ASSOCIATION: U.S. Department of Energy, Office of Environmental Audit

EXPERIENCE: 18 years

- U.S. Department of Energy
  - Assistant Team Leader and Environmental Protection Specialist in the Office of Environmental Audit.
  - Team Leader for the Weldon Spring Site Remedial Action Project and Western Area Power Administration Environmental Audits.
  - Assistant Subteam Leader for Tiger Team Assessments at the Savannah River Site, Y-12 Plant, Kansas City Plant, Idaho National Engineering Laboratory and Hanford Site.
  - Assistant Program Manager for Prioritization of Environmental Survey findings for DOE-wide, major defense and non-defense production facilities.
- U.S. Federal Energy Regulatory Commission
  - Project Coordinator and Environmental Compliance Specialist assessing cumulative environmental impacts on proposed and existing hydroelectric dams, and assessment of noncompliances on operating hydroelectric projects nationwide.
- Delew, Cather/Parsons
  - Project Site Director and Site Resources Manager reviewing engineering construction design impacts and assessing environmental impacts on the upgrading of the Northeast Corridor (Amtrak corridor between Washington, DC and Boston).
- James F. MacLaren, Ltd.
  - Project Coordinator and Site Resources Manager assessing environmental impacts (i.e., flora, fauna, fisheries, geology, surface water, and archaeological) from the proposed construction of hexafluoride, thermal, coal-fire, and hydrogenerating nuclear facilities located throughout five provinces of Canada.

EDUCATION: B.A., Anthropology, Kansas State University
M.A., Applied Anthropology, American University

NAME: Paul T. Dickman

AREA OF RESP: Assistant Environmental Subteam Leader

ASSOCIATION: U.S. Department of Energy Field Office, Nevada
Environmental Restoration and Waste Management Division

EXPERIENCE: 14 years

- U.S. Department of Energy Field Office, Nevada
  - Project management and regulatory compliance activities for the Waste Operations Branch. Duties include RCRA permitting, permit strategy, development of waste disposal projects, and characterization and assessment programs.
  - Special assignment to DOE/HQ as Assistant EM-30 Task Team Leader for 1991 Five Year Plan for Environmental Restoration and Waste Management.
  - Task Team leader for EM-30 Waste Operations reconfiguration/ modernization study.
- Other Organizations
  - Project management and development for hazardous waste management training, radioactive and mixed waste remediation and monitoring projects.
  - Project Director for the Greater Confinement Disposal Test at the Nevada Test Site.
  - Senior Radioactive Waste Management Specialist for waste operations at the Nevada Test Site.
  - Senior Scientist for the DOE's National Low-Level Waste Management Program.

EDUCATION: M.S., Natural Sciences (Nuclear Chemistry and Physics), University of Wyoming
B.A., History (of Science), University of Denver

NAME: David J. Allard

AREA OF RESP: Radiation

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 14 years

- Arthur D. Little, Inc.
  - Senior Consultant providing technical support for Tiger Team Assessments and various client cases dealing with radiation issues, such as waste management, emergency planning, training, applied technical services, and radiation protection management.
  - Participated in the Tiger Team Assessments of Morgantown Energy Technology Center and Idaho National Engineering Laboratory.
- TGM Detectors, Inc.
  - Vice President with responsibilities for radiation protection and gas-filled detector design, engineering, and marketing.
- Nuclear Metals, Inc.
  - Supervisor of Health Physics with responsibilities in the areas of environmental monitoring, external dosimetry, internal dosimetry, shielding, safety equipment engineering, radiation surveys, waste disposal, and regulatory affairs regarding various uranium and thorium manufacturing operations.
- Albany Medical Center
  - Medical/Health Physicist with responsibilities involving laboratory radiation protection, quality assurance, patient dosimetry, X-ray equipment calibration shielding, surveys, and waste disposal.

EDUCATION: M.S., Radiological Sciences and Protection, University of Lowell
B.S., Environmental Sciences, State University of New York at Albany
A.A.S., Environmental Health Technology, Hudson Valley Community College

OTHER: Certified Health Physicist, American Board of Health Physics
National Registry of Radiation Protection Technologists

NAME: Charlotte B. Banzer

AREA OF RESP: Toxic and Chemical Materials

ASSOCIATION: Consultant

EXPERIENCE: 21 years

- Arthur D. Little, Inc.
  - Toxic and Chemcial Materials Specialist for the Environmental Audit at the West Valley Demonstration Project.
- Union Carbide Corporation
  - Health, Safety, Environmental Auditor, includes conducting training programs
  - OSHA HazCom Training Programs; Canadian WHMIS Training Programs; Hazardous Chemical Safety Training Programs
- Ciba-Geigy Chemical Corporation; Diamond Shamrock Corporation; Eastman Kodak; Sherwin-Williams Company
  - Toxicologist/Regulatory Affairs Specialist including: Product safety development and determination of health safety and environmental requirements for regulatory compliance, and registration; planning, budgeting, conducting toxicological/environmental studies; corporate liaison with EPA for regulatory compliance issues regarding TSCA, FIFRA; perform risk assessments.

EDUCATION: M.S., Biology, Purdue University
B.A., Biology, Bridgewater State College

OTHER: Certified Environmental Trainer, National Environmental Training Association, Scottsdale, Arizona

NAME: Thomas L. Collins

AREA OF RESP: Waste Management

ASSOCIATION: Consultant

EXPERIENCE: 40 years

- Arthur D. Little
  - Waste Management Discipline Leader for Idaho National Engineering Laboratory Tiger Team Assessment.
- Union Carbide Corporation
  - Regional Corporate Audit Manager, managing 250 environmental, health, safety, and product responsibility audits for all domestic and international businesses. Responsible for audit quality and the audit report, auditor training, and problem-solving guidance for locations.
  - Environmental, Health, and Safety Division Manager responsible for compliance programs for internal policies and procedures and external regulatory requirements for a division that included a large ethylene business and a major technology center.
  - Business Manufacturing Manager for ethylene, propylene, and other company products. Responsible for business direction of six ethylene plants.
  - Chemical plant management at various levels. Responsible for manufacture of numerous chemicals, including highly toxic, corrosive, and flammable compounds.

EDUCATION: M.B.A., West Virginia University
B.S., Chemical Engineering, West Virginia University

NAME: Lynne Day

AREA OF RESP: Environmental Subteam Administration Support

ASSOCIATION: META

EXPERIENCE: 15 years

- META
  - Information Processing Specialist. Provides administrative support for the Environmental Subteam on Tiger Team Assessments and overall support to the U.S. Department of Energy's Office of Special Projects.
- INNOVA Communications, Inc.
  - Office Administrator. Provided system and documentation support for a local and wide area network integration firm. Worked on office automation systems configuration analysis project providing technical writing and project management support. Responsible for development of instruction materials, graphics support, technical drawings, manuals, and vendor documentation. Compiled and prepared statistical data for price quotations and cost proposals as well as for use in analysis and reporting.
- Sandler & Greenblum
  - Word Processing Departmental Manager. Developed and coordinated activities related to the word processing department for law firm. Responsible for direct supervision and staffing of word processing department. Managed local area network. Identified and resolved problems, and repaired and replaced malfunctioning hardware components. Performed database management functions.

EDUCATION: A.A., Computer Science, Strayer College
Data Processing Diploma, Strayer College

NAME: Richard Michael D'Ermilio

AREA OF RESP: Waste Management

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 7 years

- A.W. Chesterton Company
  - Responsible for the corporate hazardous and special waste management program, including identification and characterization of hazardous wastes, formulating and implementing a waste tracking program, and managing empty containers.
  - Developed and implemented facility-specific emergency contingency planning procedures.
  - Developed corporate underground storage tank management program.
- Chemical Waste Management
  - Managed a waste disposal contract for the Federal Government Defense Reutilization and Marketing Office (DRMO) which involved the identification, characterization, packaging, and removal of surplus hazardous materials located at Federal government facilities throughout New England.
- S.E.T. Environmental
  - Managed a project for Commonwealth Edison of Illinois that involved the removal of soils and decontamination of sites contaminated with polychlorinated biphenyls.

EDUCATION: M.S. (in progress), Hazardous Materials Management, Tufts University
B.A., Environmental Science, State University of New York College at Purchase

NAME: Tommy F. Eckle

AREA OF RESP: Air

ASSOCIATION: Halliburton NUS Environmental Corporation

EXPERIENCE: 35 years

- Halliburton NUS Environmental Corporation
  - Served as Environmental Special Assistant during the Tiger Team Assessment at Sandia, Albuquerque and during the Environmental Audit of the West Valley Demonstration Project.
  - Served as Technical Coordinator and Air Specialist for an Environmental Audit at the Phoenix Area Office of the Western Area Power Administration.
  - Participated in Tiger Team Assessments, as Air Specialist and Assistant Technical Coordinator, of the Rocky Flats Plant, Lawrence Livermore National Laboratory, Paducah Gaseous Diffusion Plant, and Argonne Illinois Site, and the Environmental Audit at the Nevada Operations Office facilities in Las Vegas, Nevada and Santa Barbara, California.
  - Served as Air Specialist on 6 U.S. Department of Energy (DOE) Environmental Surveys (11 sites).
  - Served as Site Coordinator in the prioritization of the DOE Environmental Survey findings.
- U.S. Steel Corporation
  - Performed air-dispersion modeling to demonstrate effectiveness of emission-control alternatives.
  - Developed inventories of air-pollutant sources at integrated steel mills.
  - Developed and conducted a road dust emission-sampling program at a major steel mill.
  - Coordinated installation of an ambient-air monitoring station for prevention of significant deterioration purposes.

EDUCATION: B.S., Chemistry, West Virginia Institute of Technology

NAME: Gerald K. Eddlemon

AREA OF RESP: National Environmental Policy Act (NEPA)

ASSOCIATION: U.S. Department of Energy, Oak Ridge National Laboratory

EXPERIENCE: 17 years

- U.S. Department of Energy
  - Preparation of aquatic ecology sections of Environmental Impact Statements and Environmental Assessments for nuclear power generating stations, geothermal projects, coal conversion facilities, weapons ranges, and DOE and U.S. Department of Defense (DOD) defense facilities.
  - Participation in Tiger Team Assessments of West Valley Demonstration Project, Pantex Plant, Nevada Test Site, Savannah River Site, Hanford Site, Princeton Plasma Physics Laboratory, and Sandia National Laboratories, Albuquerque.
  - Participation in environmental compliance audits of 15 DOD facilities across the United States and Greenland.
  - Technical assistance to the DOE Office of NEPA Oversight, including technical and regulatory analysis and development of the DOE NEPA Compliance Audit Protocol and the DOE Environmental Compliance Survey Manual.
  - Research in the Synthetic Fuels Program, including transport, fate, and effects of trace contaminants in aquatic ecosystems.

EDUCATION: M.S., Zoology, University of Tennessee
B.S., Zoology, University of Tennessee

NAME: Paul E. Feuerbach

AREA OF RESP: Inactive Waste Sites

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 5 years

- Arthur D. Little, Inc.
  - Participated in the Environmental Audit of West Valley Demonstration Project as the Groundwater, Soil, Sediment and Biota Specialist.
- The Cadmus Group, Inc.
  - Evaluated for the USEPA Office of Drinking Water (ODW), drinking water cost by area for small drinking water systems in complying with the 1986 amendments to the SDWA.
  - Analyzed and compared strategic environmental remedial alternatives available to inspectors in the USEPA Office of Drinking Water, Underground Injection Control Branch.
- Groundwater Technology, Inc.
  - Senior Environmental Consultant specializing in hazardous waste management and remediation, environmental feasibility studies and assessments, water supply investigations, and applied hydrogeology.
  - Managed and performed environmental due diligence assessments, RI/FS studies, groundwater and soil remediation programs and underground storage tank management programs.
  - Managed a three million dollar RI/FS program for a major defense contractor. Designed a field investigation program that included surface, subsurface, and stream sampling of volatile organic and chlorinated compounds, hydrological interpretation, and selection of an interim groundwater remediation program.
  - Managed and developed a hydrological and remedial implementation program for a major petroleum distribution company. Utilized best available treatment technologies in improving onsite and offsite soil and groundwater quality.

EDUCATION: M.B.A., Boston University
B.S., Geology and Hydrology, University of New Hampshire

NAME: Joanne P. Fichera

AREA OF RESP: Surface Water

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 8 years

- Arthur D. Little, Inc.
  - Provides technical support for Tiger Team Assessments and various client cases dealing with regulatory compliance, environmental problem identification, and program and procedures adequacy evaluation.
- SAIC
  - As Deputy Program Manager, provided National Environmental Policy Act-related support, including environmental impact statements; environmental assessments, surveys, and sensitivity analyses; and socioeconomic assessments for a variety of U.S. Department of Defense clients. Also, was principal investigator for socioeconomic, land use, and visual analyses.
  - For the U.S. Department of Energy, researched, compiled, and analyzed data for the environmental and socioeconomic impact analysis of the Special Nevada Report.
  - For the Strategic Defense Initiative Organization's National Test Bed Joint Program Office, analyzed and integrated construction and system implementation schedules and performed sensitivity analyses on schedule deviations.

EDUCATION: M.A. (in progress), Environmental Policy, Tufts University
M.A., Economics, Tufts University
B.A., Economics and Spanish, Tufts University

NAME: Victoria Potter Ford

AREA OF RESP: Deputy Coordinator

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 19 years

- Arthur D. Little, Inc.
  - Case leader on projects for U.S. Postal Service Senior Management: Scheduling and costs, organization, operational formality, management systems, and training.
  - Subcase leader: Multimedia permitting strategy for hazardous waste ocean incineration corporation.
- Sobotka & Company, Washington, DC
  - Case leader, Synfuels permitting strategy for DOE.
  - Subcase leader, Effects of Executive Order on regulatory reform initiatives on electroplaters for EPA.
- State of Wisconsin Office of State Planning and Energy
  - Director. Developed and implemented energy siting, R&D conservation, and coastal zone critical areas programs. Chairperson, Staff Advisory Committee of National Governor's Association on Nuclear Waste Disposal that produced policy of state consultation and concurrence.
- U.S. Environmental Protection Agency, Office of Planning and Evaluation.
  - Senior Operations Research Analyst. Member of RCRA Subtitle D Working Group that developed underlying conceptual approaches to lists and criteria for identifying hazardous wastes and cradle-to-grave waste management and tracking.

EDUCATION:
Graduate studies in Manufacturing/Organizational Structure, George Washington University
Public Policy/Finance, University of Hartford
M.A., Economics, State University of New York, Stony Brook
Graduate Studies, Physics, University of Massachusetts
B.S., Physics, University of Michigan, Ann Arbor

NAME: Gregory T. Haugan, Jr.

AREA OF RESP: Environmental Subteam Report Administration

ASSOCIATION: META

EXPERIENCE: 8 years

- META
  - Information Management Specialist. Manages a team responsible for onsite administrative support and report production for the Environmental Subteam during Tiger Team Assessments.
- UDI Contractors, Inc.
  - Project Manager and Administrator. Supervised field operations and managed office administration for a construction management firm.
- GLH, Inc.
  - Program Analyst. Specialized in research, report writing, and project management software for an information resources software consulting firm.

EDUCATION: Graduate Studies, General Administration, University of Maryland
B.A., General Studies, University of Maryland

NAME: Mark O. Heuberger

AREA OF RESP: Groundwater/Soil, Sediment, and Biota

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 10 years

- HMM Associates, Inc.
  - Managed a remedial investigation and feasibility study completed at an EPA Superfund site in compliance with the requirements of the Comprehensive Environmental Response Compensation and Liability Act. Served as project manager, technical lead, and primary contact with Potentially Responsible Parties, the state environmental agency, and EPA.
  - Managed numerous hazardous waste site assessments, hydrogeologic investigations, and remedial investigations involving interfacing with local, state, and Federal regulatory agencies.
- Harding - Lawson Associates, Inc.
  - Supervised geotechnical and environmental evaluation of sites for excavation and construction of dams, tailings ponds, and waste storage facilities.
- FMC Corporation
  - Developed and implemented a wide range of site investigations involving geologic mapping, interpretation of aerial photography and satellite imagery, chemical sampling and analysis, and geophysical techniques, including magnetic, electromagnetic, gravity, electrical resistivity, and radiometric studies.

EDUCATION: M.S., Geology, University of Nevada at Reno
B.S., Earth Sciences, Dartmouth College

OTHER: Certified Professional Geologist

NAME: Paul H. Jones, Jr.

AREA OF RESP: Radiation

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 9 years

- Arthur D. Little, Inc.

  - Provided radiological data for nuclear power facility exercises. This program included generation of in-plant, onsite and offsite radiological data and development and analysis of data for reentry/recovery and ingestion pathway drills. Developed and taught training programs for emergency response and radiological data development. Served as the DOE environmental radiation specialist for the Weldon Spring Site Remedial Action Project, Grand Junction Remedial Action Project, and Uranium Mill Tailings Remedial Action Project Environmental Audits, and the Solar Energy Research Institute, Pittsburgh Energy Technology Center and Los Alamos National Laboratory Tiger Teams. Served as the environmental radiation lead for the Los Alamos National Laboratory Tiger Team.

- General Electric Company, Knolls Atomic Power Laboratory

  - Served as the site radiological controls auditor. Conducted comprehensive evaluations, audits and surveillance of laboratory and prototype radiological work activities, and provided comprehensive assessments useful to management in assuring a high degree of compliance with radiological controls requirements, improvement in radiological work practices, and attainment of high and uniform radiological standards.

  - Prepared and reviewed radiological work permits, procedures, and packages, including comprehensive ALARA review. Provided technical evaluation of work practices and implementation of proper radiological controls for site facilities, including radioactive waste disposal, critical facilities, fuel processing, chemistry laboratories, and materials characterization laboratories.

EDUCATION: M.S., Radiological Sciences and Protection Physics, University of Lowell
M.S., Environmental Engineering, University of Lowell
B.S., Civil Engineering, University of Lowell

OTHER: Certified Health Physicist by the American Board of Health Physics
Engineer-in-Training in Massachusetts

NAME: Bruce Kemp

AREA OF RESP: National Environmental Policy Act (NEPA)

ASSOCIATION: Advanced Sciences, Inc.

EXPERIENCE: 10 years

- Advanced Sciences, Inc.

  - Senior Environmental Analyst. Responsible for NEPA document preparation and technical reviews. U.S. Department of Energy (DOE) projects include technical review support for the EIS on the Siting, Construction, and Operation of New Production Reactor Capacity and environmental assessments at DOE facilities nationwide.

- Kanazawa, Japan

  - Freelance Technical Editor. Wrote technical and promotional copy and edited scientific and technical documents for public and private clients, including environmental, medical, and engineering studies.

- Oscar Larson and Associates, Consulting Engineers, Surveyors and Planners

  - Environmental Planner. Consultant to local governments and private development community on land development projects, city and rural planning, and environmental documentation. Projects included industrial and residential development, hydroelectric facilities, environmental impact documents, coastal zone development, and land use plans.

- Rising Sun Enterprises, Environmental Planning Consultants

  - Associate Planner. Prepared environmental analysis and planning documents. Projects included biomass facility environmental impact report, off-shore oil-drilling platform assembly site environmental report, and urban redevelopment.

- USDA Forest Service, Tahoe National Forest

  Timber Sale Administrator. Inspected active timber harvest operations for compliance with contract provisions and for protection of natural resources values.

EDUCATION: B.S., Natural Resources Planning, California State University at Humboldt
B.A., English, University of New Hampshire

NAME: Michael J. Lees

AREA OF RESP: Radiation

ASSOCIATION: U.S. Navy

EXPERIENCE: 26 years

- Arthur D. Little, Inc.
  - Senior Consultant working on development, testing, and installation of computer integrated manufacturing systems. Specialty is developing training programs for manufacturing systems operators and training those operators. Supervisor of five persons who write technical documentation for manufacturing systems.

- U.S. Navy Nuclear Power Program
  - Operated and maintained Navy nuclear power plants for 26 years on board submarines starting out as a junior officer and eventually becoming Commanding Officer of two submarines.
  - Acted as Line Manager of a submarine support ship which contained a nuclear support facility that processed liquid and solid radioactive waste from submarines and performed corrective maintenance in radiation areas.
  - Line Manager of a training facility that trained personnel that operated nuclear powered submarines.
  - Member of an assessment team (Naval Nuclear Propulsion Examining Board) that evaluated safe operations of Navy nuclear power plants and nuclear support facilities. Participated in 52 assessments that evaluated operations, administration, line of knowledge, material condition, and radiological controls.

EDUCATION: M.S., Oceanography, Scripps Institute of Oceanography, University of California, San Diego.
B.S. Naval Science, U.S. Naval Academy, Annapolis, MD
Studies in Business Administration, College of Charleston, Charleston, SC

NAME: Susan V. Levi

AREA OF RESP: Environmental Subteam Administrative Support

ASSOCIATION: Advanced Sciences, Inc.

EXPERIENCE: 5 years

- Advanced Sciences, Inc.
  - Information Processing Specialist. Provides administrative support for the Environmental Subteam on Tiger Team Assessments.
  - Secretary/Word Processor. Provided administrative support for the U.S. Department of Energy's Office of New Production Reactors. Also, prepared reports and proposals, and provided graphics support.
- The Handley Library
  - Clerk-typist. Provided administrative support to the circulation department; tracked and sent overdue notices, worked in the catalog system, filed, and worked the circulation desks.
- Virginia Commonwealth University Library
  - Periodical Department Supervisor. Responsible for tracking, and checking in and out of all the library's periodicals using the library's periodical data base system. Supervised work-study students in that department. Responsible for front desk and all xerox, microfilm, and microfiche machines.

EDUCATION: Computer Information Systems, Strayer College
General Studies, Lord Fairfax Community College
General Studies, Shepherd College

NAME: James W. Melloni, Jr.

AREA OF RESP: Quality Assurance

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 13 years

- Arthur D. Little, Inc.
  - Served as Quality Assurance Specialist for the U.S. Department of Energy's Tiger Team Assessment of Sandia National Laboratories, Albuquerque, and the Environmental Audit of the West Valley Demonstration Project.
  - Served as Quality Assurance Manager for a U.S. Department of Energy program through Westinghouse Savannah River Company; was responsible for implementing a manufacturing/ quality program that has been certified by the American Society of Mechanical Engineers.
  - Served as Quality Assurance Manager for a major project for the U.S. Army which involved oversight of the design, fabrication, test, and delivery of several prototype air-monitoring laboratories and shelters. This project required the generation of the Quality Assurance Program Plan covering all phases of the project. The program encompassed both test and inspection.
  - Served the U.S. Air Force Prototype Flight Cryocooler (PFC) program office as Quality Assurance Manager; revised the quality assurance manual to update and improve Arthur D. Little, Inc. quality practices, primarily in the area of quality systems; implemented a failure analysis and corrective action system and initiated audits and reviews of all the quality and manufacturing operations.

EDUCATION: M.B.A., Business Administration, New Hampshire College
B.S., Biology, Boston College

NAME: Mary B. Peters

AREA OF RESP: National Environmental Protection Act (NEPA)

ASSOCIATION: Labat-Anderson, Inc.

EXPERIENCE: 9 years

- Labat-Anderson, Inc.
  - Manages the preparation of Environmental Impact Statements (EISs) and Environmental Assessments (EAs) for Air Force actions.
  - Prepares the biology, cultural resources, air quality, and noise sections of EISs, EAs, and LEISs for weapons systems deactivations; realignments, force structure changes, and hazardous waste cleanups at Air Force installations; and munitions development and deployment at Army installations. Performs technical reviews of environmental documents for the Air Force, Army, Strategic Defense Command, Corps of Engineers, and U.S. Department of Energy (DOE).
  - Managed and participated in an emissions and offset analysis of air quality in southern California for the Air Force.
  - Identifies and delineates wetlands, and performs environmental, engineering, and regulatory review of water development projects for architectural/engineering firms.
  - Interdisciplinary team member responsible for environmental and technical review of remedial investigation/feasibility study work plans and engineering evaluation/cost analysis reports.
  - Managing and participating in an evaluation of the Installation Restoration Program for the Air Force to improve the program structure and identify site closeout actions.
  - NEPA compliance team member on the DOE Tiger Team at Sandia National Laboratories, Albuquerque.

EDUCATION: B.S., Fisheries and Wildlife Biology, University of North Dakota
Courses in Geohydrology and Civil Engineering, University of Nebraska at Omaha

NAME: Paul J. Pifalo

AREA OF RESP: Quality Assurance

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 18 years

- Arthur D. Little, Inc.
  - Served as Quality Assurance Specialist for the U.S. Department of Energy Tiger Team Assessment of Idaho National Engineering Laboratory. Evaluated quality assurance capabilities, risk to the government, and contractor quality compliance during site audits as a U.S. Department of Defense (DoD) support contractor.
  - Served as Quality Assurance Manager for the Engineering Sciences Section of Arthur D. Little, Inc. Prepared and received government approval of a Program Quality Assurance Plan which required MIL-Q-9858A compliance.

- MA/COM, Inc.
  - Managed a manufacturing system, certified by the American Society of Mechanical Engineers (ASME) and National Board of Boiler and Pressure Vessel Inspectors, to be compliant to ASME Code Section VIII (Unfired Pressure Vessels) with welders certified under ASME Code Section IX.
  - Broad-based quality and manufacturing engineering experience in DD/U.S. Department of Energy projects.
  - Extensive manufacturing engineering and management experience in defense electronics, metal fabrications, and the plastics industry.

EDUCATION: M.B.A., Business Administration, Suffolk University
B.S., Industrial Engineering, University of Lowell

NAME: John J. Pulliam III

AREA OF RESP: National Environmental Policy Act (NEPA) Subteam Leader

ASSOCIATION: U.S. Department of Energy, Office of NEPA Oversight

EXPERIENCE: 22 years

- U.S. Department of Energy

  - Environmental Protection Specialist, Project Activities Division and Waste Activities Division. Determine required NEPA documentation for DOE projects. Review Environmental Impact Statements and Environmental Assessments for accuracy and adequacy. Develop NEPA compliance policies and guidance.

- U.S. Fish and Wildlife Service

  - General Biologist. Recommended species to be added to the List of Endangered and Threatened Species over a four-state area.
  - Wildlife Biologist. Reviewed and recommended approval of recovery plans for endangered and threatened species in the Office of Endangered Species, Washington, DC. Revised recovery planning procedures. Also managed the nationwide endangered species land acquisition program.
  - Fishery Biologist/Fish and Wildlife Biologist. Analyzed water resource development projects to determine recommended mitigation for related impacts. Utilized Habitat Evaluation Procedures and remote sensing. Participated in river basin planning.
  - Fishery Biologist. Worked as a hatchery biologist and then assistant manager at four national fish hatcheries in three states. Propagated warm fish and trout, including disease diagnosis and control. Prepared reports and performed various administrative functions.

EDUCATION: M.S., Biology, University of Southwestern Louisiana
B.S., General Agriculture, New Mexico State University

NAME: James J. Rea

AREA OF RESP: Groundwater/Soil, Sediment, and Biota

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 9 years

- Arthur D. Little, Inc.
  - Consultant providing technical support for Tiger Team Assessments and various client cases dealing with groundwater, Comprehensive Environmental Response and Compensation Act (CERCLA), and Superfund Amendments and Reauthorization Act (SARA) issues.
- Briggs Associates, Inc.
  - Environmental Scientist with responsibilities of project management; conducting land transfer site assessments; emergency response spill/site assessments; remedial investigation/remedial design; direct client and regulatory agency interfacing, including compliance management of Resource Conservation and Recovery Act, CERCLA, SARA, Toxic Substances Control Act, and National Pollutant Discharge Elimination System permitting; proposal preparation; underground storage tank management; surface and subsurface investigation; hydrogeologic contaminant flow conditions; surveying and field mapping; and technical report preparation.
- Chem-Nuclear Systems, Inc.
  - Health Physics Technician to support the U.S. Department of Energy's UMTRA Projects. Responsible for radiological engineering assessments; personnel and environmental dosimetry; decontamination; site and vicinity property excavation control; and laboratory analysis.
- Benson, Motin and Greer Drilling Company
  - Drilling Fluid Engineer. Responsibilities included the design and maintenance of the drilling fluid programs for secondary recovery oil wells and natural gas injection wells.

EDUCATION: Graduate Studies, Hydrogeology and Environmental Science, University of Montana
B.S., Conservation, Fort Lewis College

NAME: William G. Rhodes

AREA OF RESP: Group Coordinator

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 11 years

- Arthur D. Little, Inc.
  - Participated in the Tiger Team Assessment of Sandia National Laboratory, Albuquerque, as the Deputy Technical Coordinator for the Environmental Subteam. Participated in the West Valley Demonstration Project Environmental Audit as the Radiation Specialist and Deputy Team Coordinator.
- General Electric Company, Knolls Atomic Power Laboratory
  - Lead Engineer. Responsible for the radiological environmental monitoring for the laboratory and quality assurance for some environmental surveillance activities for U.S. Navy facilities. Supervised three site action programs to ensure each site complied with Environmental Protection Agency radionuclide emission standards.
  - Lead Health Physicist, Radiological Health and Environmental Surveillance. Responsible for supervising internal, external, and environmental dosimetry for the laboratory.
  - Radiological Engineer. Conducted inspections and audits of various radiological facilities, including prototype reactor sites, radiochemistry laboratories, radioactive waste processing and storage facilities, fuel fabrication facilities, hot cell laboratories, and x-ray and radiography facilities. Also responsible for various radiological engineering tasks, such as approving radiological procedures, decontamination and decommissioning, soil characterization studies and air sampling applied research and development.

EDUCATION: M.S., Radiological Sciences and Protection, University of Lowell
R.T. (ARRT), Registered Radiological Technologist, Wittenberg University and Mercy Medical Center
B.A., Physics and Biology (Dual Major), Wittenberg University

OTHER: Certified Health Physicist, American Board of Health Physics

NAME: Hilton Rivera

AREA OF RESP: Quality Assurance

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 8 years

- Arthur D. Little
  - Quality Assurance technical specialist for DOE Tiger Team Assessments. Involved in the quality assurance portion of the environmental audit on DOE's Idaho National Engineering Laboratory. The purpose of these assessments is to evaluate QA Programs and their application to the generation of sound, verifiable, and traceable environmental data and to quality in all aspects of environmental control and environmental management.
  - Quality assurance coordinator for the Chemical Sciences Section. Responsibilities include data audits in support of the environmental program conducted by the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA).

- Enseco, Inc.
  - Program administrator performing environmental regulatory compliance audits, assessments and appraisals of laboratories to support the Environmental Protection Agency (EPA), Contract Laboratory Program (CLP) at some EPA contracted laboratories.
  - Responsible for the coordination of sampling and analysis for geoengineering firms working at Superfund sites, and assuring their compliance with the Superfund Amendments and Reauthorization Act of 1986 (SARA). Also, responsible for the quality assurance and coordination of sampling and analysis for the New York State DEC hazardous waste management program.

EDUCATION: B.A., Biology, Indiana University

NAME: William E. Schramm

AREA OF RESP: National Environmental Policy Act (NEPA)

ASSOCIATION: U.S. Department of Energy, Oak Ridge National Laboratory

EXPERIENCE: 12 years

- Oak Ridge National Laboratory
  - Research Associate. Provide technical assistance to DOE's Office of NEPA Oversight. Responsible for the revision of NEPA compliance procedures for ORNL Environmental Sciences Division.
- Martin Marietta Energy Systems
  - Project Manager. Directed hazardous waste site Preliminary Assessments, Remedial Investigations, Feasibility Studies, and Remedial Actions at 16 U.S. Department of Defense facilities in 14 states.
- Texas Bureau of Economic Geology
  - Research Associate. Investigated levels of fossil fuel reserves remaining in shale.
- Ocean Drilling and Exploration Company
  - Senior Staff Geologist. Supervised five company geologists in exploration and field development activities.
- Union Oil Company of California
  - Geologist. Oversaw field development activities on 10 company fields.

EDUCATION: Graduate Studies (in progress), Ecology, University of Tennessee
M.B.A., Resource Management, University of Texas at Austin
M.S., Geology, Louisiana State University
B.S., Geology, Rensselaer Polytechnic Institute

NAME: Stephen L. Simpson

AREA OF RESP: National Environmental Policy Act (NEPA)

ASSOCIATION: U.S. Department of Energy, Office of NEPA Oversight

EXPERIENCE: 8 years

- U.S. Department of Energy
  - Environmental Protection Specialist, Waste Activities Division, Office of NEPA Oversight. Responsible for review of NEPA documentation for waste activities, including that from the Albuquerque Field Office and for drafting guidance on NEPA issues. Also responsible for floodplain/wetlands reviews.
- Rich, Tucker & Rice
  - Associate. Handled environmental cases, including Clean Water Act, hazardous waste, and sludge disposal, as well as corporate/general litigation.
- Zanecki, Lally & McDonough
  - Associate. Served as sole environmental and historic preservation attorney for a major zoning law firm, especially on NEPA and wetlands issues.
- Prior experience
  - Researched and wrote on environmental law issues, including NEPA, Clean Water Act (both National Pollutant Discharge Elimination System and wetlands), and historic preservation, for several public-interest groups.
  - Excavated archaeological sites for the State of Virginia and served as a curatorial intern for a historic house museum.

EDUCATION: J.D., Antioch School of Law
A.B., Early American History, Archaeology, and Material Culture, College of William and Mary

NAME: Millicent L. Stokes

AREA OF RESP: Environmental Subteam Administrative Support

ASSOCIATION: Advanced Science, Inc.

EXPERIENCE: 6 years

- Advanced Sciences, Inc.
  - Technical Editor/Information Management Specialist. Responsibilities include providing onsite administrative oversight, technical editing, and graphics support to Environmental Subteams during Tiger Team Assessments, editing the draft assessment reports, and overseeing the preparation of the camera-ready copy of final assessment reports for the U.S. Department of Energy's (DOE's) Office of Special Projects.
  - Writer/Editor. Researched, wrote, and edited fact sheets and information briefs on energy conservation and renewable energy topics, including window innovations, energy-efficient lighting, and heat pumps, for a DOE-funded energy information service. Also, managed the service's information brief system, supervised media outreach for the project, and researched selected inquiries received from special interest groups.
  - Response Analyst/Media Liaison. Analyzed and researched inquiries on energy from the general public, U.S. Congress, and trade associations. Also, wrote information briefs and assisted with media outreach.
- *The Rocky Mount Record* (Rocky Mount, North Carolina)
  - News Editor/Reporter. Edited news copy, wrote news and feature articles, and took photographs.
- Givens Performing Arts Center, Pembroke State University
  - Theatrical Management Assistant. Wrote articles and press releases about events and performances for the Center's newsletter and local media.

EDUCATION: B.A., Journalism/Communicative Arts (Minor in Public Relations), Pembroke State University

NAME: Clifford H. Summers

AREA OF RESP: Waste Management

ASSOCIATION: Aurthur D. Little, Inc.

EXPERIENCE: 32 years

- Arthur D. Little, Inc.
  - Surface Water and Drinking Water Specialist, Environmental Audit of West Valley Demonstrative Project, West Valley, NY
  - Resident Environmental Coordinator on Johnston Island from October 1989 to June 1991 for Office of Program Manager for Chemical Demilitarization.
  - Resident Environmental Engineer on Johnston Island from October 1989 to July 1990 for U.S. Army Chemical Activity, Western Command. Oversaw environmental compliance activity of GOCO's five environmental engineers and five plant operations staff. Conducted inspections and audits for environmental compliance. Served on OA teams evaluating Operational Readiness and Preoperational Surveys.
  - Audited USAF bases as part of ECAMP program.
  - Audited petroleum refineries, petrochemical plants, manufacturing plants, aerospace manufacturing facilities for environmental compliance with regard to CWA.
  - Trained client auditors in compliance auditing, led trainees through audits of client facilities.

EDUCATION: A.B., Chemistry, Florida State University
Graduate Studies at Louisiana State University and Northeastern University

NAME: Carl C. Trettin

AREA OF RESP: National Environmental Policy Act (NEPA)

ASSOCIATION: U.S. Department of Energy, Oak Ridge National Laboratory

EXPERIENCE: 13 years

- Oak Ridge National Laboratory
  - Senior Associate. Environmental regulation and assessment, wetlands ecology, biogeochemistry, and forest ecology.
- North Carolina State University
  - Research Associate. Research and teaching wetlands ecology, biogeochemistry, and ecological engineering.
- Michigan Technological University
  - Program Manager. Forest resource research and development and technology transfer programs.
  - Adjunct Assistant Professor. Wetlands ecology, forest, soil management, soil survey, and silviculture.
  - Manager. Research facility management.
  - Research Scientist. Forest soil management, wetland science and regulation, soil survey, hydrology, silviculture, and peat resources.
  - Assistant Research Scientist. Soil survey, soil characterization, and silviculture.

EDUCATION: Ph.D. (candidate, 1991), Wetland Ecology/Soil Science, North Carolina State University
M.S., Forestry/Soils, Michigan Technological University
B.S., Forestry/Hydrology, Michigan Technological University

NAME: Roger Voeller

AREA OF RESP: Surface Water

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 13 years

- Arthur D. Little, Inc.
  - Consultant in the Environmental, Health, and Safety Auditing Unit of Arthur D. Little's Environmental Management Section. Professional responsibilities are focused primarily in the field of water pollution control.
- Ocean Spray Cranberries, Inc.
  - Corporate Environmental Engineer with responsibility for compliance activities at facilities throughout the United States and advisor to senior management on how to achieve compliance with current and pending laws and regulations.
  - Participated in the development and implementation of an auditing program including performance of a series of facility audits conducted while the Company was under EPA indictment.
  - Developed, recommended, and implemented capital projects to improve water pollution control programs at food facilities.
  - Managed all aspects of environmental permit work including preparation of applications, negotiating limits and language, and compliance reporting.
  - Managed all technological aspects of a $25 million capital improvement program for industrial wastewater treatment at nine facilities in six states over a four year period.
- Food Processing
  - In addition to Mr. Voeller's environmental management experience, he has extensive experience in the food processing industry in the areas of process development, project management, and manufacturing.

EDUCATION: B.S., Chemical Engineering, University of Oklahoma

NAME: Helen C. Walters

AREA OF RESP: Environmental Subteam Administrative Support

ASSOCIATION: META

EXPERIENCE: 25 years

- META
  - Information Processing Specialist. Provides administrative support for the Environmental Subteam on Tiger Team Assessments.
- Cate & Associates, Chartered
  - Administrator. Served as Executive Assistant with administrative responsibilities for filing estate accounting in excess of $125,000 to the Commissioner of Accounts; liaison with attorneys and the courts in regard to these accounting; handled accounts receivables and payables.
- National Council of Farmer Cooperatives
  - Administrator. Responsible for administration of financial and human resources for a staff of 13 professional and 13 support staff. Duties in the area of finance included the preparation and oversight of an annual operating budget of $2.5 million with reporting responsibility to a committee composed of board members. Duties in the area of human resources included hiring and training of all support staff, and developing and coordinating employee benefits packages. Responsible for accommodating 65 employees in newly constructed, 17,000-square-foot office space.

EDUCATION: B.S., Business, Kent State University

NAME: Stewart G. Young

AREA OF RESP: Toxic and Chemical Materials

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 15 years

- Arthur D. Little, Inc.
  - Conducted environmental, health, and safety audits and facility assessments for numerous industrial clients. Developed audit materials and a procedure for auditing indoor air quality programs.
  - Evaluated occupational health risks posed by alternative energy production technologies for the Electric Power Research Institute. Also developed the exposure assessment module of a model for assessing the carcinogenic risks of coal-fired electric power production.
  - Developed a medical surveillance program for employees in the synthetic fuel industry for the National Institute for Occupational Safety and Health. Evaluated the health implications of using synthetic fuels for a diesel engine manufacturer.
  - Conducted a study of the potential health effects associated with residential energy conservation and indoor air pollution for the Gas Research Institute. Has also directed investigations of the "sick building syndrome."

EDUCATION: Master of Health Science, Epidemiology, Johns Hopkins School of Hygiene and Public Health
B.A., Biology, University of Pennsylvania

Appendix A-3

Biographical Sketches of Safety and Health Subteam Members

Appendix A-3-1

Biographical Sketches of Plutonium and Enriched Uranium Subteam Members

NAME: Charles Grua

AREA OF RESP: Safety and Health Subteam Leader

ASSOCIATION: U.S. Department of Energy, Office of Performance Assessment

EXPERIENCE: 34 years

- TSA Team Leader, Office of Safety Appraisals, Office of Performance Assessment
- Quality Assurance Engineer, Team Leader, Lead Auditor, Office of Quality Assurance
- Program Manager, Environmental Control Technology Division, DOE/ERDA
- Program Manager Combined Cycle Power Plant, Department of Interior, Office of Coal Research
- Acting Chief, Plant Engineering and Project Management Division, Department of Interior, Office of Saline Water
- Resident Manager, R&D sites for desalination technologies at Freeport, TX; Roswell, NM; Orange County, CA; Office of Saline Water, Department of Interior
- Maintenance Engineering National Institutes of Health, Department of Health, Education, and Welfare
- Application Engineer Honeywell
- Third Assistant Engineer, Lykes Brothers Steamship Co.
- U.S. Navy

EDUCATION: B.S., Marine Engineering, U.S. Merchant Marine Academy

OTHER: Member, American Society of Mechanical Engineers
Member, American Society of Quality Assurance

NAME: Neil M. Barss

AREA OF RESP: Radiation Protection

ASSOCIATION: U.S. Department of Energy, Office of Health

EXPERIENCE: 12 years

- U.S. Department of Energy, Germantown, MD
  - Health Physicist: Concerned with the technical considerations and program assessments of the various DOE field offices, national facilities, and policy on health physics/radiation protection and radiological emergency preparedness concerns.
  - Radiation Protection appraisal on the Lawrence Berkely Laboratory Tiger Team.
- University of Illinois at Urbana, Champaign, IL
  - Health Physicist: Responsibilities included the oversight of a Radiation Protection Program associated with a 1.5 Megawatt TRIGA Reactor and consultation to the nuclear engineering and life sciences faculty, staff, and students on all matters related to health physics. Oversight of the radiation protection program of a 450 MeV LINAC accelerator facility.
- Clinton Power Station, Illinois Power Company
  - Radiological Engineering Specialist: Concerned with the evaluation and implementation of a radiological environmental monitoring program for both routine and emergency plan applications; radiological safety procedures and development; and the technical specifications for an integrated radioanalytical, internal dosimetry, and radiation protection record-keeping computer system.
- State University of New York at Buffalo
  - Health Physicist concerned with the daily implementation and oversight of the University Radiation Protection Program and associated 2-Megawatt PULSTAR research reactor.

EDUCATION: B.A., Radiation Biology, State University of New York at Buffalo
Graduate Program, Radiation Science, Georgetown University

OTHER: Member, Health Physics Society

NAME: Elmer R. Burd

AREA OF RESP: Worker Safety and Health (OSHA) Compliance

ASSOCIATION: Halliburton NUS Environmental Corporation

EXPERIENCE: 35 years

- Halliburton NUS Environmental Corporation
  - Zone Manager of Health, Safety and Training (HST) for the Halliburton NUS, US EPA Field Investigation Team (FIT) contract. Manages Safety and Health operations for 400 employees. Serves as Health and Safety Officer, Radiation Safety Officer, and Medical Monitoring Coordinator. Participant in DOE Tiger Team Assessments.
- Jones and Laughlin Steel (LTV)
  - Industrial Hygienist and Industrial Hygiene Supervisor.
  - Designed sampling programs and trained technicians at a five-battery coke oven and by-product recovery area. These programs complied with the Coke Oven Emission Standard and the pending Benzene Standard.
  - Developed and implemented a hearing conservation program, after first performing extensive personnel noise exposure surveys, and conducted noise surveys throughout communities relative to proposed city ordinances.
  - Conducted health and safety assessments to determine compliance with OSHA standards and other recommended practices, and hygiene surveys in the workplace for environmental contaminates.
- Pittsburgh Testing Laboratories
- Gulf Research and Development Corporation
- Aluminum Company of America

EDUCATION: U.S. Department of Health and Education-Laser Safety, Dust and Noise
Evaluation and Training for Mines, Radiological Health and Safety, and fundamentals of Industrial Hygiene

OTHER: Certified Industrial Hygiene Technologist, American Board of Industrial Hygiene, 1976

NAME: James A. Cox

AREA OF RESP: Auxiliary Systems

ASSOCIATION: Private Consultant

EXPERIENCE: 45 years

- Private Consultant
  - Provides consulting services to The International Atomic Energy Agency, the National Bureau of Standards, and, the U.S. Department of Energy in the areas of operations, experiments, training and research reactors
  - Participated in five Technical Safety Appraisals
- Union Carbide, Oak Ridge National Laboratory
  - Director of Operations Division: Responsible for the Health Physics Research Reactor, Oak Ridge Critical Facility, Tower Shielding Reactor, High Flux Isotope Reactor, Bulk Shielding Reactor, Oak Ridge Research Reactor, Low Intensity Testing Reactor, and X-10 Graphite Reactor; also responsible for Hot Cell Operations (20 cells), Waste Operations (low- and intermediate-level radioactive liquid wastes, radioactive solid waste, and low-level and hot off-gas), and Radioisotope Production and Sales
  - Superintendent of Reactor Operations for the X-10 Graphite Reactor and Low Intensity Testing Reactor
- Clinton Laboratories, Oak Ridge, Tennessee
  - Manager of Radioisotope sales
- U.S. Army, Manhattan District, Oak Ridge, Tennessee
  - Nuclear Engineer

EDUCATION: B.S., Chemical Engineering, Washington State University
Graduate Work, Brown University

OTHER: Authored Manual For Safe Operation of Research Reactors
Fellow, American Nuclear Society

NAME: Timothy A. DeLong

AREA OF RESP: Worker Safety and Health (OSHA Compliance)

ASSOCIATION: Halliburton NUS Environmental Corporation

EXPERIENCE: 8 years

- Halliburton NUS Environmental Corporation
  - Occupational Safety and Health Engineer: Evaluates and provides management consulting in occupational safety and health compliance for various clients. Involved in inspections, and appraisals of construction sites, operating facilities, and laboratory areas. Develops and revises Industrial Safety Policies Programs, and Procedures.
- Illinois Power Company, Clinton, IL
  - Supervisor of Industrial Safety Programs and a Safety Specialist at the Clinton Power Station: directed and administered the Industrial Safety and Hygiene Program for 1,200 company employees and 800 contractor employees at a commercial nuclear power station.
- Baldwin Associates, Clinton IL
  - Safety Engineer: developed programs and conducted field safety activities during the construction, system testing, and startup operations of Clinton Power Station.

EDUCATION: B.S., Occupational Safety and Industrial Technology, Illinois State University, 1983.

OTHER: 1990-Present, Certified Safety Professional (CSP), Board of Certified Safety Professionals, No. 9625
1988-1989, EPA Asbestos Control Contractor Supervisor, Certification No. A2994
1985-1988, Emergency Medical Technical (Ambulance), Illinois Department of Public Health

SPECIAL TRAINING: Attended numerous industrial safety and hygiene continuing education seminars

NAME: James S. Durham

AREA OF RESP: Radiological Protection

ASSOCIATION: Battelle-Pacific Northwest Laboratory, Richland, Washington

EXPERIENCE: 11 years

- Battelle-Pacific Northwest Laboratory, Richland, Washington
  - Research Scientist,Dosimetry Technology Section, Health Physics Department: Responsible for organizing, planning, equipment developing, and data analysis of the various dosimetry systems
  - Manager of the DOE Beta Dosimetry Upgrade and Evaluation Task of the Applied Health Physics Research Program. Author of the skin dosimetry computer code VARSKIN MOD2, written for the Nuclear Regulatory Commission Office of Research
- University of Illinois
  - Nuclear Engineer: Performed measurements using LW-115 type 2B (a cellulose nitrate Solid State Nuclear Track Detector (SSNTDs) on a Dense Plasma focus (DFF) machine. Simulated the Cleveland Clinic/NASA Lewis Research Center neutron beam using the Monte Carlo code package HETC (High-Energy Nucleon-Meson Transport Code). Developed a model for the internal dosimetry for emitters of a mouse using integrable point-kernel methodologies. Performed internal dosimetry calculations for radiolabeled monoclonal antibodies used in cancer research. Developed computer codes which calculate the dose to spheres from uniformly distributed alpha and beta sources, both within the sphere and external to the sphere.

EDUCATION: B.S., Nuclear Engineering, University of Illinois
M.S., Nuclear Engineering, University of Illinois
Ph.D., Nuclear Engineering, University of Illinois

NAME: Stephen J. Eder

AREA OF RESP: Natural Phenomena Hazards

ASSOCIATION: EQE Engineering Consultants

EXPERIENCE: 11 years

- EQE Engineering Consultants
  - Regional Manager for San Francisco regional office
  - Provided engineering and management consulting towards seismic evaluation of facility safety systems and structures at the Savannah River Site, Lawrence Livermore National Laboratory, and Oak Ridge National Laboratory.
  - Prepared and reviewed the Seismic Qualification Utility Group (SQUG) Generic Implementation Procedure. Provides the Steering Group with ongoing support. Serves as a Subject Matter Expert for the walkdown training course. Pioneered the raceway guidelines and performed trial reviews at more than 12 nuclear power plants.
  - Project manager and project engineer participation in safety system seismic evaluations at 14 commercial nuclear reactor facilities.
- URS/John A. Blume & Associates, Engineers
  - Project Engineer for performance of seismic vulnerability assessments for nuclear power plants, public utilities, and commercial facilities.
- JG Bouwkamp, Inc. Structural Engineers
  - Research analyst for study of high-rise building seismic performance

EDUCATION: B.S., Civil and Environmental Engineering, Clarkson College of Technology, Potsdam, NY
M.S., M. Eng., Structural Engineering and Structural Mechanics, University of California, Berkeley, CA (Fellowship)

OTHER: Registered Professional Engineer (Civil-CA)
Tau Beta Pi and Phi Kappa Phi National Honor Societies
Member, American Society of Civil Engineers, Earthquake Engineering Research Institute, Applied Technology Council, Structural Engineers Association of Northern California, and Electric Power Research Institute Post-Earthquake Investigation Team

NAME: H. J. Groh

AREA OF RESP: Organization and Administration

ASSOCIATION: President, HJG, Inc., Aiken, SC

EXPERIENCE: 39 years

- Consultant
  - Member of Safety Oversight Committee for Tritium Research Laboratory of Sandia National Laboratories, Livermore.
  - Member of Presidential Advisory Committee on verification of nuclear warhead dismantlement and nuclear materials controls.
  - Technical and management consultant to EG&G Rocky Flats, Inc. Provided technical assistance in establishing independent safety review function for resumption of plutonium operations.
- Westinghouse Savannah River Company
  - Assistant to Executive Vice President. Staff and consulting position during transition period from DuPont to Westinghouse at Savannah River Site.
- E. I. DuPont de Nemours and Company, Inc.
  - Manager of site long-range planning, production scheduling, and budget coordination organization.
  - On loan 1984-1985 to DOE Headquarters as technical consultant to Office of Nuclear Materials Production.
  - General Superintendent - Works Technical - Manager of plant technical organization responsible for technical support of all production operations, including reactor fuel and target fabrication, heavy water production, nuclear reactor operation, fuel reprocessing, tritium production, plutonium production, and waste management.
  - Director, Environmental Sciences Section (SRL)
  - Director, Separations Chemistry and Engineering Section (SRL)
  - Research Manager, Separations Chemistry Division (SRL)

NAME: Lydia Guerra

AREA OF RESP: Report Coordinator, Safety and Health Subteam

ASSOCIATION: M.H. Chew and Associates, Inc.

EXPERIENCE: 12 years

- M.H. Chew and Associates, Inc.
  - Report Coordinator for the Management Team Report of the Tiger Team Assessment at the Idaho National Engineering Laboratory (INEL).
  - Report Coordinator for the Safety and Health Subteam reports of the Tiger Team Assessment at the Pittsburgh Energy Technology Center, Lawrence Berkeley Laboratory and the Princeton Plasma Physics Laboratory.

- Westinghouse Idaho Nuclear Company, Inc.
  - Report Coordinator for the Safety and Health Subteam Reports of the Tiger Team Assessments at the Savannah River Site, Pinellas Plant, and Brookhaven National Laboratory.
  - Report Coordinator for the Technical Safety Appraisal Reports at the Oak Ridge National Laboratory, Strategic Petroleum Reserve Site, Y-12 Plant TSA Followup.
  - Westinghouse Idaho Nuclear Company, Inc. Coordinator for the Technical Safety Appraisal of the Idaho Chemical Processing Plant at INEL.
  - Manager, Information Processing Services, responsible for the management direction and operation of two centralized Information Processing Centers.

EDUCATION: B.S., Corporate Training, Idaho State University

OTHER: Certified Instructional Trainer, Corporate Training
Word Processing Instructor, Eastern Idaho Technical College

NAME: Wayne D. Holmes, P.E.

AREA OF RESP: Fire Protection

ASSOCIATION: Professional Loss Control, Inc.

EXPERIENCE: 19 years

- Professional Loss Control, Inc., Philadelphia, PA
  - Branch Manager: Fire protection design, inspection, audit, and appraisal of nuclear power, production, research and other industrial and commercial facilities
- American Nuclear Insurers, Farmington, CT
  - Director, Technical Review: Manager of domestic fire protection engineering support staff and engineering coordinator for engineering risk assessment of foreign reactors
- Northeast Utilities, Hartford, CT
  - Corporate Fire Protection Specialist: Responsible for system-wide fire protection policies
- Industrial Risk Insurers, Boston, MA
  - District Supervising Engineer: Manager of fire protection staff for insurer of highly protected commercial and industrial facilities

EDUCATION: M.S., Fire Protection Engineering, Worcester Polytechnic Institute B.S., Mechanical Engineering, Worcester Polytechnic Institute

OTHER: Member, Society of Fire Protection Engineers and Research Committee
Member, National Fire Protection Association, and, NFPA Committees on Atomic Energy, Fire Test, and Safety to Life Subcommittee on Industrial Occupancies
Member, ASTM Committees on Fire Standards
Licensed Professional Engineer, CT
Fire protection consultant to IAEA, 1985-1990

NAME: Jack J. Janda

AREA OF RESP: Worker Safety and Health (OSHA) Compliance

ASSOCIATION: Comprehensive Environmental Health Services, Inc.

EXPERIENCE: 19 years

- Comprehensive Environmental Health Services, Inc.
  - Safety and health training
  - Phase I and II site assessments
  - Asbestos analysis
  - Onsite OSHA-type compliance inspections
  - Safety and industrial hygiene surveys
  - DOE Technical Safety Appraisals (TSAs) and Tiger Team Assessments (TTA)
- Occupational Safety and Health Administration
  - Established regional enforcement goals, policies, and procedures
  - Directed industrial hygiene and safety compliance activities
  - Managed agency program, supervised industrial hygienists and safety specialists, and team leader on major inspections
  - Expert Witness
- Accident Prevention Laboratory, Institute of Agricultural Medicine
  - Accident investigations involving consumer products, flammable clothing and products, etc.

EDUCATION: B.S., General Service, University of Iowa
M.S., Preventive Medicine and Environmental Health-emphasis in Industrial Hygiene, University of Iowa College of Medicine

OTHER: Member, American Industrial Hygiene Association
Member, American Conference of Governmental Industrial Hygienists
Certified Asbestos Hazard Emergency Response Act, Building Inspector and Asbestos Management Planner
Accredited U.S. Department of Labor/OSHA Instructor for Safety and Industrial Hygiene

NAME: Nels C. Jensen

AREA OF RESP: Training and Certification

ASSOCIATION: EG&G Idaho, Inc.

EXPERIENCE: 25 years

- EG&G Idaho, Inc.
  - Team member of Solar Energy Research Institute (SERI) Tiger Team Assessment
  - Team member of Waste Management Facilities TSA, a part of the Tiger Team Assessment of the Savannah River Site
  - Member of Radiological Protection Program appraisal team at Martin Marietta Energy Systems (Oak Ridge Complex)
  - Team member of Plutonium Finishing Plant TSA and Hot Fuel Examination Facility TSA
  - Consultant to DOE-HQ in resolution of restart issues and concerns for the N-Reactor and the Plutonium Finishing Plant RMC line
  - Consultant to NRC for prelicensing actions at South Texas Project
  - NRC operator licensing examiner; prepare, administer, and grade written, simulator, and walk-through exams for initial license applicants and requalification exams
  - Training Coordinator, Shift Supervisor, Loss of Fluid Test Facility
- U.S. Navy
  - Reactor Operator and Technician, USS Enterprise; Staff Instructor, A1W, INEL; U.S. Navy Nuclear Power Program

EDUCATION: NRC - I&E PWR Course Series (Westinghouse and Babcock and Wilcox) EG&G Management Specialty Courses
Navy - Power and Prototype Schools
Navy - Electronics Technician School

OTHER: Certified NRC operator licensing examiner, Westinghouse and Babcock and Wilcox pressurized water reactor designs

NAME: John H. Johnson

AREA OF RESP: Quality Verification

ASSOCIATION: Private Consultant

EXPERIENCE: 15 years

- President, J-E-T-S (Nuclear Consulting Company)
  - Provides consulting services to commercial and government clients related to quality programs, training, procedure development, and productivity improvement. Clients include DOE, USNRC, and over 20 nuclear utilities
- BARTECH, Inc. (Nuclear Consulting/Technical Services)
  - Provided state-of-the-art consultant services to commercial clients and the U.S. Government in the areas of nuclear quality assurance and personnel training
- Quality/Training Administrator, Newberg Corporation, Nuclear Design/Construct Company
  - Responsible for management of corporate training and qualification program for a 4,000 employee nuclear design/construction company. Trained, tested, and certified over 350 QA/QC audit and inspection personnel
- Area QC Engineer, Fruin-Colnon Engineers Nuclear Design/Build Company
  - Responsible for coordination and verification of construction quality in Fuel and Auxiliary Buildings at Clinton Nuclear Station.
- QA Technician, Carolina Power and Light Company
  - QA Technician for startup of Brunswick Nuclear Project and audits throughout system; Shearon Harris Project inspector.
- Technical Qualifications
  - Level III per ANSI N45.2.6 - All Disciplines
  - American Welding Society - Certified Welding Inspector (CWI) Registration #84070131

EDUCATION: A.S., (w/Honors), Civil Engineering, Wake College
Additional coursework, Mechanical Engineering, North Carolina State University
Metallurgy/Welding, Illinois State University

OTHER: Represented U.S. at the International Atomic Energy Agency Symposium on Worldwide Nuclear Quality Program Effectiveness, and served as Chairman of Guides and Standards Working Group

NAME: O. Clinton Kolar

AREA OF RESP: Criticality Safety

ASSOCIATION: M.H. Chew and Associates, Inc.

EXPERIENCE: 40 years

- Private Consultant
  - Participant in six Technical Safety Appraisals (TSAs) prior to that at LANL (SRL, PGDP, ORNL, SNL, METC, and INEL).
- Lawrence Livermore National Laboratory, Livermore, CA
  - Nuclear criticality safety: Responsible for nuclear criticality safety programs at LLNL.
  - Group leader of Livermore Plutonium Array Program with responsibility for providing technical and administrative direction on design, performance, and analysis of a series of experiments to determine critical spacings of arrays of plutonium parts.
  - Assistant head of a division with responsibilities for administrative and technical supervision of physics personnel. Technical responsibilities were in reactor neutronic analysis, radiation effects, and shielding.
- Lawrence Berkeley National Laboratory, Berkeley, CA
  - Conducted investigations of nuclear reaction mechanisms, magnetic field measurements, beam shielding, particle energy determination, accelerator field mapping.

EDUCATION: B.A., Physics, University of California at Los Angeles
Ph.D., Physics, University of California at Berkeley

OTHER: Registered Professional Nuclear Engineer, State of California
Certified U.S. DOE Accident/Incident Investigator
Member, American Physical Society, American Nuclear Society, Sigma Xi, American Association of Physics Teachers, National Science Teachers Association, and American Society of Safety Engineers
Professor, Oregon State University Physics Department (courtesy faculty)

NAME: Manrico C. Lara

AREA OF RESP: Technical Support

ASSOCIATION: M.H. Chew and Associates, Inc.

EXPERIENCE: 27 years

- Lawrence Livermore National Laboratory
  - Leader, Plutonium Engineering Section: Responsible for the administrative management, technical direction, and operation of the section. Engineering support provided to the Plutonium facility operations, metallurgical research, weapons and nuclear design programs, and chemistry R & D processes
  - Project Engineer, 100 MeV Electron-Positron Linear Accelerator: Responsible for all engineering phases of design, fabrication, assembly, and testing of beam transport system, beam absorbing devices, hydrogen recombiner, radioactive water cooling system for neutron and positron targets, facility inert gas and water systems, and nuclear physics experimental apparatus. Supported the programmatic efforts of the Cyclo-graf, Van de Graaf and superconducting microwave project
  - Mechanical Engineer, weapons program involved in the design of Poseidon missile

EDUCATION: B.S., Mechanical Engineering, National University
M.S., Mechanical Engineering, University of Oklahoma

OTHER: Professional Engineer (Nuclear), California

NAME: Peggy J. Lewis

AREA OF RESP: Coordinator

ASSOCIATION: U.S. Department of Energy, Office of Quality and Safety Programs

EXPERIENCE: 17 years

- U.S. Department of Energy, Germantown, MD
  - Office of the Deputy Assistant Secretary for Safety and Quality Assurance - Detailed as a Program/Administrative Assistant to the Deputy Assistant Secretary's office performing all types of work for the Office of Safety and Quality Assurance. Responsible for tracking on the computer all action items and personnel items for the office.
  - Office of Quality and Safety Programs - Coordinator for Tiger Team Assessment at Lawrence Livermore National Laboratory. Also, coordinated Quality Assurance Appraisal Reports for accuracy and consistency. Performed all Administrative and Personnel duties for the office. Responsible for all secretarial work for the Division Director, including typing memos and letters, travel arrangements, etc.

EDUCATION: Department of Energy courses in administration, word processing, and other computer-related courses.

NAME: Joseph Lischinsky

AREA OF RESP: Emergency Preparedness

ASSOCIATION: Applied Consultants, Inc.

EXPERIENCE: 10 years

- Applied Consultants, Inc.
  - Serves as President and supports a variety of projects in the areas of radiation protection, materials licensing, emergency planning, decommissioning, waste management, and training
  - Participated in the DOE Tiger Team Assessment of the Idaho National Engineering Laboratory (INEL). Served as an Environmental Health Physicist to the assessment team
  - Served as Consultant Health Physicist to various environmental engineering, planning, and law firms specializing in environmental issues. These assignments have included the provison of expertise in radiological site assessment, health and radiation safety, site remediation, and expert witness testimony
  - Performed numerous radiological health and safety reviews and emergency preparedness audits at both production and utilization facilities. These activities have included commercial nuclear power production as well as radioactive materials manufacturing-related facilities
  - Provided technical and management oversight of the decommissioning of major source material manufacturing facilities licensed by both the U.S. Nuclear Regulatory Commission and the Agreement States Program. Provided support in all matters of regulatory affairs, quality assurance, and compliance aspects of the decommissioning process

EDUCATION: B.S., Biology, Suffolk University
M.Sc., Applied Management, Lesley College

NAME: Robin L. Longerbeam

AREA OF RESP: Coordinator

ASSOCIATION: U.S. Department of Energy, Office of Performance Assessment, Division of Technical Assessment

EXPERIENCE: 5 years

- U.S. Department of Energy
  - Coordinator for Tiger Team Assessments at Brookhaven National Laboratory, Argonne National Laboratory, and Los Alamos National Laboratory.
  - Developed and maintain database of technical experts available for Safety and Health Subteams to Tiger Teams and for Technical Safety Appraisals
  - Office assistant responsible for preparing security work, team rosters, conflict of interest statements, team letters, and other preparation and followup work for appraisals
- Internal Revenue Service, Computer Services Division
  - Wang Branch Coordinator - Instructed personnel in obtaining a working knowledge of basic word processing functions on the Wang processor, updated old and preparing new training manuals, equipment repair, and qualifying employees for passwords
  - Staff assistant to computer programmers and IRS auditors
- Hedrick Distributor
  - Executive Dealer responsible for establishing clientele, generating company revenues by sales, and processing loan applications
  - Prepared visual presentations to present to potential clients
  - Responsible for recruiting and training new employees
- Blue Ridge Outfitters
  - Sales Representative - Acquired reservations, coordinated large company outings, set up logistics for overnight stays, meals, and transportation
  - Company Photographer - Documented group activities of white water rafting excursions, provided photos and layout designs for advertising purposes

EDUCATION: B.F.A., Fine Arts (with concentration in Photography), Shephard College, WV, 1988

NAME: Phillip A. Lowe

AREA OF RESP: Experimental Activities Site/Facility Interface

ASSOCIATION: Intech, Inc.

EXPERIENCE: 30 years

- Experimental Activities/Facilities Review
  - Provide consultation to nuclear utilities and government in the areas of management, application of advanced power generation technologies, and control and mitigation of environmental pollution
- DOE/ERDA/AEC
  - Deputy Assistant Inspector General for Inspections - DOE
  - Assistant Director for Inspections, Chief Thermal Energy Storage Branch - (ERDA)
  - Chief Steam Generator Branch - (AEC)
- Combustion Engineering
  - Manager of Experiments for Product Engineering for Nuclear Power Plant Systems
- Westinghouse Bettis Atomic Power Laboratory
  - Senior Engineer for thermal hydraulic reactor design
- U.S. Navy
  - Officer, Civil Engineer Corps

EDUCATION: Ph.D., Mechanical Engineering, Carnegie-Mellon University
M.S., Mechanical Engineering, University of Rhode Island
B.S., Mechanical Engineering, University of Utah

OTHER: AEC - Westinghouse Fellowship
Fellow, American Society of Mechanical Engineers
Chairman, Advanced Energy Systems Division
Board for Research and Technology Development
Diplomate, American Academy of Environmental Engineers
Advisor to Electric Power Research Institute
Registered Professional Engineer
Certified Environmental Engineer
Member - Air and Waste Management Association

NAME: Oliver D. T. Lynch, Jr.

AREA OF RESP: EH Senior Manager

ASSOCIATION: U.S. Department of Energy, Office of Performance Assessment

EXPERIENCE: 26 years

- U.S. Department of Energy, Germantown, MD
  - Director, Safety Inspections Division, OSA
- U.S. Nuclear Regulatory Commission, Rockville, MD
  - Radiation Measurements and Health Effects Section Chief
  - Standardization and Decommissioning Section Chief
  - Safeguards and Non-Power Reactors Section Chief
  - Radiation Protection Section Leader
  - Senior Operating Reactor Project Manager
  - Environmental Assessment Section Chief, TMI Program Office
  - TMI Special Inquiry Group (Rogovin)
  - Senior Environmental Project Manager
- International Atomic Energy Agency
  - Technical Working Group Leader, Vienna, Austria
  - Instructor, Cairo, Egypt
- General Dynamics, Electric Boat Division, Groton, CT
  - Chief, Radiological Control Health Engineering
- U.S. Atomic Energy Commission, Las Vegas, NV
  - Radiological Specialist
- San Diego State University, San Diego, CA
  - Assistant Radiological Safety Officer

EDUCATION: M.S., Nuclear Physics, San Diego State University
B.S., Applied Physics, San Diego State University

OTHER: Member, Health Physics Society
Member, American Forestry Association
Sigma Pi Sigma
Author, Textbooks and Training Manuals, Small Craft Safety, Operations, and Navigation

NAME: Thomas J. Mazour

AREA OF RESP: Maintenance

ASSOCIATION: Private Consultant

EXPERIENCE: 20 years

- Private Consultant
  - Participated in 10 Tiger Team Assessments and 22 Technical Safety Appraisals in the maintenance, operations, training and certification, emergency preparedness, and facility safety review areas
  - Developed and presented training programs for DOE site-surveillance personnel and DOE Tiger Team members.
  - Supported development of nuclear facility training programs to meet DOE Training Accreditation Program, including; electrical maintenance, mechanical maintenance, and instrument and control positions
  - Evaluated operations, maintenance, organization and administration, and training areas for NRC inspections of commercial nuclear power plants
- Analysis & Technology, Inc.
  - Supported the NRC in evaluating utility training programs and developing training review criteria and regulations
  - Supported INPO development of a performance-based training accreditation program, including; job and task analysis of maintenance and operator positions
- Burns & Roe, Inc.
  - Design engineer and licensing engineer for Clinch River Breeder Reactor and an NRC licensed PWR
- U.S. Navy: Nuclear Training Officer
  - Supervised nuclear reactor operations and maintenance, nuclear weapons officer

EDUCATION: B.S., Mathematics, U.S. Naval Academy
M.B.A., University of New Haven
M.S., Industrial Engineering, University of New Haven
Sc.D (candidate), Management Systems, University of New Haven

NAME: J. Lawrence McCabe

AREA OF RESP: Quality Verification

ASSOCIATION: U.S. Department of Energy, Performance and Quality Verification Division

EXPERIENCE: 6 years

- U.S. Department of Energy
  - Performed quality verification functions for the Tiger Team Appraisal (1991) at the Solar Energy Research Institute (SERI).
- U.S. Department of Defense, Fort Lee, VA
  - Developed soldier reliability and maintainability requirements for Quartermaster equipment in the areas of water purification, materials handling, and airdrop resupply missions
  - Coordinated the Quartermaster School position on reliability and maintainability with other DOD installations throughout the country
  - Conducted safety appraisals of current Army Quartermaster School Soldier Feeding Concepts

EDUCATION: M.B.A., Shippensburg University
B.S., Mining Engineering, The Pennsylvania State University

OTHER: Quality and Reliability Engineering Internship, Texarkana, TX
Registered Professional Engineer, PA
Registered Professional Engineer, WV

NAME: William E. Mott

AREA OF RESP: Technical Editor

ASSOCIATION: Private Consultant

EXPERIENCE: 38 years

- Consultant
  - Participated in technical safety appraisals, verification inspections, and firearms safety reviews at a number of DOE facilities; and, in evaluations of the health and safety activities at the facilities of several U.S. petroleum companies
- U.S. Department of Energy, Germantown, MD
  - Rehired Annuitant: Served as technical safety expert to the Director, Office of Operational Safety, on oversight and appraisal activities relating to safeguards and security and to the packaging and transportation of hazardous materials
  - Deputy and Senior Technical Advisor to the Director,Office of Operational Safety
  - Director, Division of Environmental and Safety Engineering
  - Director, Division of Public Safety
- U.S. Energy Research and Development Administration, Germantown, MD
  - Director, Division of Environmental Control Technology
- U.S. Atomic Energy Commission, Germantown, MD
  - Assistant Director for Technical Programs, Division of Isotopes Development
- Gulf Research and Development Company, Pittsburgh, PA
  - Research Scientist and Manager of Nuclear Applications

EDUCATION: B.S., Physics, College of Wooster
M.S., Physics, Carnegie-Mellon University
Ph.D., Physics, Carnegie-Mellon University

OTHER: Author or coauthor of 96 publications and reports
Eight patents
Member, American Physical Society, American Nuclear Society, Sigma Xi, and Phi Beta Kappa

NAME: Larry Perkins

AREA OF RESP: Worker Safety and Health (OSHA) Compliance

ASSOCIATION: Martin Marietta Energy Systems

EXPERIENCE: 17 years

- Martin Marietta Energy Systems
  - Safety and Health Training
  - OSHA Compliance Inspections
  - OSHA 1910 & 1926 Training
  - Industrial Safety Management
  - Technical Safety Appraisals
  - Electrical NEC/OSHA Appraisals
- Southwest Virginia Community College
  - Safety and Health Programs
  - Environmental Programs
  - Hazardous Communications
  - Electrical Training
- Belfast-Rosedale Fire Department
  - Fire Chief
  - Firefighter I, II, III
  - HazMat I, II, III
  - HazMat Training
  - Firefighter Training
- Island Creek Coal Company
  - Safety and Health Training
  - Electrical Training
  - Electrician

EDUCATION: M.S., Industrial Safety, Marshall University
B.S., Environmental Safety and Health, East Tennessee State University

OTHER: Member, American Society of Safety Engineers
Member, American Society of Mining Engineers
Member, National Fire Protection Association
U.S. Department of Labor/OSHA Instructor (General Industry and Construction)
U.S. Department of Labor/MSHA Instructor (Safety and Electrical)

NAME: Geoffrey J. Quinn

AREA OF RESP: Packaging and Transportation

ASSOCIATION: WASTREN, Inc.

EXPERIENCE: 12 years

- WASTREN, Inc.
  - Radioactive Waste Management Consultant: Provide regulatory (NRC, DOT and DOE Order) compliance assistance and audits, Safety Analysis Reports for transportation packages and waste management facilities, operational readiness reviews for processes and facilities, and related technical support services.
- Nuclear Packaging, Inc.
  - Program Manager: Responsible for development of TRUPACT-II Type B Transportation Package for contact-handled transuranic (CH-TRU) wastes including design, analysis, full-scale testing and preparation of the Safety Analysis Report. Also responsible for preliminary development of the NuPac 72-B Cask for transport of remote-handled transuranic (RH-TRU) wastes.
- EG&G Idaho, Inc.
  - Program Manager: Responsible for Three Mile Island Unit 2 (TMI-2) Spent Fuel Debris Shipping Program including procurement of a new Type B spent fuel shipping cask (Model 125-B), specification of handling equipment interfaces between TMI-2 and the Idaho National Engineering Laboratory (INEL), and technical requirements for the preparation of the fuel debris for transport. Also responsible for DOE funded research and development programs on removal and transport of high specific activity accident wastes.
- Transnuclear, Inc.
  - Program Manager: Responsible for radioactive waste volume reduction systems.

EDUCATION: M.S., Carnegie-Mellon University
B.S., Pennsylvania State University

NAME: Michael W. Salmon

AREA OF RESP: Natural Phenomena Hazards

ASSOCIATION: EQE Engineering Consultants

EXPERIENCE: 7 years

- EQE Engineering Consultants
  - Principal Engineer
  - Responsible for the evaluation of the structural design of the new Special Recovery Facility at Savannah River Plant Building 221-F for compliance with DOE Order 6430.1A. Additional responsibilities as the team member in charge of review for natural phenomena hazards included the evaluation of equipment anchorage, systems interactions, and seismic methodologies as compared with national design standards (UBC-1988, UCRL-15910).
  - Responsible for the evaluation of the structural design of the Process Experimental Pilot Plant at INEL for compliance with current DOE seismic design criteria (UCRL-15910). Responsibilities included the review of dynamic analysis, review of preliminary seismic risk methodologies, and the review of equipment anchorage and systems interactions in the facility.
  - Responsible for aiding in the development of a probabilistic basis for the prediction of explosively-driven block motion and resulting displacement magnitude.
  - Responsible for developing the seismic motion time histories for the Palisades Nuclear Power Plant fuel reload. This task involved screening historical time histories, developing soil-structure interaction models for the plant associated system, performing numerous dynamic time history analyses, and statistically reducing the date to arrive at realistic median and upper bound motion spectra throughout the plant.

EDUCATION: M.S., Structural Engineering, University of Illinois
B.S., Civil and Structural Engineering, Purdue University

OTHER: Registered Professional Engineer (Civil-CA)
Tau Beta Pi
University of Illinois Graduate Fellowship
Member, American Society of Civil Engineers, Dynamic Analysis Committee
Member, Earthquake Engineering Research Institute

NAME: John E. Sanchez

AREA OF RESP: Worker Safety and Health (OSHA) Compliance

ASSOCIATION: EG&G Rocky Flats, Inc.

EXPERIENCE: 3 years

- Industrial Hygiene
  - Technical support relating to worker safety and hygiene and environmental management.
  - Providing expert support in regards to monitoring instruments, respiratory protection, and heat stress issues.
  - Member of the Health and Safety Practices Committee for drafting chapters for health and safety plans.
- U.S. Navy Hospital Corpsman (Reservist)
  - Technical support in medical services, and safety and hygiene practices.

EDUCATION: Major Disciplines: Chemistry and Political Science
Minor Disciplines: Biology, Anatomy and Physiology
University of Colorado, Boulder
University of Southern Colorado
Front Range Community College
Naval School of Health Sciences

NAME: David H. Schultz

AREA OF RESP: Operations

ASSOCIATION: COMEX Corporation

EXPERIENCE: 30 years

- COMEX Corporation
  - Reactor Engineer: provide technical support to DOE and the Nuclear Regulatory Commission as a field inspector in the areas of emergency preparedness, training, quality assurance, maintenance, and operations. Performed more than 200 field inspections on behalf of the NRC and DOE as a team member. Performed special investigations into incidents and allegations. Performed facility inspections, including emergency response facilities, control room design reviews, and equipment (SPDS) reviews. Performed detailed procedure inspections and audits, including emergency operating procedures for nuclear facilities. Co-author on several NUREG publications and training documents.
- USN Nuclear Submarine Program
  - Qualified for command at sea and Engineer Officer. Served in most officer positions, including engineer officer during refueling of the power plant. Served as electronics technician during enlisted period, and was qualified as a reactor technician and reactor operator.

EDUCATION: B.S., Chemistry/Engineering, University of Utah
M.S., Nuclear Engineering, USN Nuclear Power training

OTHER: USN Nuclear Power Training - enlisted technician NRC BWR Simulator Course
MIT Reactor Safety Course

NAME: Douglas P. Serpa

AREA OF RESP: Personnel Protection

ASSOCIATION: Private Consultant

EXPERIENCE: 21 years

- Private Consultant
  - Participated in 6 Technical Safety Appraisals.
  - Member of Secretary of Energy's Tritium Task Group.
  - Member of the Sandia National Laboratories, Livermore Tritium Research Laboratory Safety Oversight Committee.
- Senior Principal Scientist, Stone & Webster Engineering Corporation
  - Responsible for the development of the Radiation Protection and ALARA programs for the DOE U-AVLIS Production Plant.
  - Responsible for Accident Analysis, Radiation Protection, Waste Management, Industrial Safety & Hygiene, and Quality Assurances sections of the LLNL Tritium Facility SAR.
- Senior Radiation Protection Engineer, Chemrad Corporation
  - Responsible for strategic planning, program development, project management and marketing for Chemrad's real-time radiological and geological monitoring system (USRADS).
- President and CEO, Airplanes, Inc.
  - Provided FAA and DOE approved air transport of hazardous and radiological materials, emergency transport of radiation accident response teams and victims, and dedicated emergency transport aircraft to major California Medical Centers for transplant and neonatalogy patients.
- Senior Nuclear Generation Engineer, Pacific Gas and Electric Company
  - Responsible for radiochemistry, radiation protection, and radiological emergency response system support.
  - Provided expert testimony before NRC and State agencies.
  - Senior Health Physicist: Responsible for nuclear, geothermal, and coal environmental radiological assessment programs, and radiological support projects for nuclear power plants.

EDUCATION: A.A., Chemistry, Modesto Junior College
B.S., Zoology, University of California, Davis
M.S., Biophysics and Radiation Protection, Texas A&M University

OTHER: Member, Health Physics Society
Member, ANS/ANSI Committee on Standardization of In-Plant Radiation Protection Instrumentation

NAME: Carl M. Stroud

AREA OF RESP: Radiological Protection

ASSOCIATION: Pacific Northwest Laboratory

EXPERIENCE: 31 years

- Staff Scientist, Health Physics Department
  - Manager, Personnel Neutron Dosimetry Evaluation and Upgrade Project
  - Contributor, Hanford Defense Waste Environmental Impact Statement
  - Contributor, Three-Mile Island Programmatic Environmental Impact Statement
  - Technical Liaison to DOE
  - Participated in ten previous Appraisals
  - Co-author of the Draft DOE procedure for Radiation Protection Functional Appraisals
- U.S. Army Corps of Engineers
  - Civil Engineer, Combat Engineer Emergency Readiness
  - Defense Nuclear Agency, Health Physicist and Contracting Officer Technical Representative
  - Chairman, Joint DOD/DOE Intrinsic Radiation from Nuclear Weapons (INRAD) Committee
  - DOD Representative, Interagency Radiation Research Committee (IRRC) and Committee on Interagency Radiation Research and policy Coordination (CIRRPC)
- Savannah River Plant, DuPont
  - Research Analytical Radiochemist/Lab Supervisor

EDUCATION: B.S., Chemistry, The Citadel
M.S., Nuclear Engineering, University of Missouri, Rolla

NAME: Timothy F. Thompson

AREA OF RESP: Worker Safety and Health (OSHA) Compliance

ASSOCIATION: Halliburton NUS Environmental Corporation

EXPERIENCE: 6 years

- Halliburton NUS Corporation, Aiken, S.C.
  - Serves as Occupational Safety and Health Engineer providing service for multiple clients. Activities include OSHA inspections, surveillances, and appraisals of existing occupational safety and health programs in general industry and construction environments.
  - Conducted a safety management appraisal of the Corps of Engineers, Savannah River Site, 1991. Conducted a safety and asbestos assessment of the U.S. Air Force Mark IV Project, Guam (USA), 1991, and evaluated the effectiveness of a security contractor's firearms safety training program, 1991.
  - Authored industrial and construction safety procedures on fall protection; scaffolds; welding, cutting and grinding; vehicle safety; material handling; cranes and hoists; ropes and slings; powered industrial trucks; electrical safety; and excavation and shoring during the development of a client's safety program manual.
- U.S. Department of Defense, Army
  - Authored safety procedures as part of safety manual. Duties have included industrial, explosives, and chemical weapons safety oversight. Conducted safety program evaluations in the areas of safety program management, explosives, chemical surety, and industrial safety. Reviewed operational hazard analysis, disaster control plans, standard operating procedures, site plans, and conceptual designs for safety concerns. Provided training in the areas of OSHA hazard communication and driver safety. Investigated industrial accidents involving personal injury and/or property damage. Authored and implemented local regulations and procedures. Reviewed and interpreted ANSI, NFPA, and OSHA standards.

EDUCATION: B.S., Safety Science, Indiana University of Pennsylvania

OTHER: Certified Safety Professional (CSP)

TRAINING: Attended numerous safety training courses and workshops

Appendix A-3-2

Biographical Sketches of Reactor, Critical Assemblies, and Tritium Facilities Subteam Members

NAME: Leonard M. Lojek

AREA OF RESP: Team Leader

ASSOCIATION: U.S. Department of Energy, Office of Performance Assessments

EXPERIENCE: 32 years

- U.S. Department of Energy, Washington, DC
  - Safety and Health Subteam Leader for Tiger Team Assessments and Team Leader for Technical Safety Appraisals. Leader or team member on 14 TSA's.
  - Quality Assurance Manager, Assistant Secretary for Environment, Safety and Health.
  - Quality Assurance Program Manager, Assistant Secretary for Fossil Energy.
  - Program Manager of R&D efforts in Solvent Refined Coal Conversion Programs (SRC-I and SRC-II), Assistant Secretary for Fossil Energy.
- Chemical Systems Laboratory, DOD
  - Project Manager and Project Engineer for disposal of obsolete toxic chemical munitions.
  - Product Engineer for smoke and pyrotechnic chemicals, and for riot control chemicals. Process Engineer for plasticized white phosphorus munitions.
- Calgon Corporation
  - Technical Service Engineer for industrial and utility water treatment systems.

EDUCATION: M.S.A., Management Engineering, George Washington University
B.S., Chemical Engineering, Carnegie Mellon University

OTHER: Member of AICHE, ASQC, and ADPA

NAME: Lorin C. Brinkerhoff

AREA OF RESP: Organization and Administration

ASSOCIATION: Private Consultant

EXPERIENCE: 38 years

- Private Consultant, associated with Scientech, Inc., ORAU, and EG&G, Idaho
- Technical Safety Appraisal Team Leader/DOE Office of Safety Appraisals
- Acting Reactor Safety Branch Chief-DOE Headquarters
- Senior Nuclear Safety Specialist-AEC/ERDA/DOE
- Senior Nuclear Engineer-Aerojet General Corporation, Nerva Program, Nuclear Rocket Development Center (NRDS), Nevada Test Site
- Manager, Nuclear Critical Facility, Lawrence Livermore National Laboratory
- Reactor Foreman, Phillips Petroleum Co., Idaho Test Site
- Graphite Research Analyst, Hanford, Washington

EDUCATION: B.S. Chemical Engineering, University of Utah

OTHER: Member, ANS-15 Standards Committee on Research Reactor Safety (1980-1989)
Member, ANSI N-16 Standards Committee on Nuclear Criticality Safety (1978-1984)
Listed in Who's Who in the East and Who's Who in the World

NAME: Blake P. Brown

AREA OF RESP: Experimental Activities and Site/Facility Safety Review

ASSOCIATION: Private Consultant

EXPERIENCE: 32 years

- Private consultant providing support and assistance to DOE in nuclear safety policy, assessments and appraisals, and in identification of standards and criteria for nuclear facilities

- Department of Energy and predecessor agencies (ERDA, AEC)

  - Team Leader, Technical Safety Appraisals
  - Program Manager, Nuclear Criticality Safety
  - Group Leader, Nuclear Facility Safety
  - Nuclear Safety Engineer, Appraisals and Safety Reviews

- Atomic Power Development Associates, Detroit, Michigan

  - Systems Engineer for sodium systems of the Fermi Reactor

- Phillips Petroleum Company, Idaho National Engineering Laboratory

  - Chemical Research Engineer for development of processes and equipment for the Idaho Chemical Processing Plant

EDUCATION: B.S., Chemical Engineering, University of Idaho

OTHER: DOE Representative on ANSI N-16 Committee on Nuclear Criticality Safety (1985-89)
Past Secretary-Treasurer and member of Board of Directors of Nuclear Engineering Division, American Institute of Chemical Engineers
Recipient of numerous Federal outstanding and superior awards, commendations, and recognition awards

NAME: John E. Curtis

AREA OF RESP: Worker Safety and Health (OSHA) Compliance

ASSOCIATION: EG&G Idaho

EXPERIENCE: 15 years

- Project, division, and corporate levels of field responsibility and management in occupational safety and health, in both construction and general industry
- Certified safety professional (CSP) with numerous certifications from OSHA
- Instructed classes in management and safety and health requirements for all levels of employees in mining, construction, and general Industry at locations around the United States.
- Instructed undergraduate and graduate level classes in occupational safety and health engineering while a Faculty Member of the Occupational Safety and Health Department at Murray State University, Murray, KY.
- Appraisal experience: Conducted OSHA Audits at projects across the United States in both general industry and construction; past Tiger Team appraisals include Lawrence Livermore and Hanford.

EDUCATION: M.S., Occupational Safety and Health Engineering, Murray State University
B.S., Secondary Education, Western Kentucky University

OTHER: Professional Member Status-American Society of Safety Engineers
National Safety Management Society
American Society for Training and Development
American Society of Fire Service Instructors

NAME: Woodson B. Daspit

AREA OF RESP: Technical Support

ASSOCIATION: W.B.D. Consulting Corporation

EXPERIENCE: 40 years

- Consultant
  - Reactor operations, training and certification, auxiliary systems, technical support, reactor design, and general reactor technology.
  - Westinghouse Electric & Bechtel National Corporations: conceptual design of new production reactor.
  - Team member on 13 previous Technical Safety Appraisals.
- DuPont, Savannah River Plant
  - Senior Reactor Associate for advanced studies.
  - Process Associate for advanced studies: procedure enhancement, training, and simulator procurement.
  - Chief Supervisor for reactor physics: hydraulics, criticality studies, heavy water technology, production reactor charge design, test reactor technical assistance, and manual and automated production calculations.
  - Site Emergency Response Committee.
  - Responsible for mechanical, electrical, and instrument assistance groups.
  - Shielding and instrumentation group leader.
  - Experimental Physics: critical facility startup and operations.
- U.S. Naval Ordnance Test Station

EDUCATION: M.S., Physics, Louisiana State University
B.S., Physics, Louisiana State University

OTHER: Member, American Nuclear Society
Member, Sigma Xi
Member, Sigma Pi Sigma

NAME: T. Guy Fortney, M.D.

AREA OF RESP: Medical Services

ASSOCIATION: Private Consultant

EXPERIENCE: 39 years

- Private Consultant
- Union Carbide Corporation
  - Corporate Medical Director (Danbury, CT)
  - Assistant Corporate Medical Director (Indianapolis, IN)
  - Plant Medical Director/Staff Physician, Oak Ridge Gaseous Diffusion Plant
- Private Practice
  - Family Medicine, Oak Ridge, TN
- Appraisal experience
  - Richland Washington
  - Sandia National Laboratory

EDUCATION: M.D., University of Louisville, Louisville, KY
Pre-Med, Eastern Kentucky State University, Richmond, KY
Mini-Residency, Occupational Medicine, University of Cincinnati, Cincinnati, OH
Internship (Rotating), St. Joseph's Infirmary, Louisville, KY

OTHER: Licensed Physician, Tennessee and Kentucky
American College of Occupational Medicine
Tennessee College of Occupational Medicine
Resident, Roane/Anderson County Medical Society

NAME: Joseph M. Garner

AREA OF RESP: Radiation Protection

ASSOCIATION: Private Consultant

EXPERIENCE: 45 years

- Private Consultant
  - Radiation Protection, Mound Laboratory, Miamiasburg, OH
  - Tiger Team Assessments and Radiation Protection Appraisals including General Dynamics Services Co. and Monsanta Research Corporation, Mound Laboratories.
  - Monsanta Research Corporation, Mound Laboratory. Member of Decontamination and Decommissioning Management Team.
- Team Leader
  - Mound's Emergency Response Team
- Health Physics Supervisor
  - Responsible for programs involving Pu^{239}, Pu^{238}, Po^{210}, and Tritium.
  - Responsible for safety for the SNAP 27 program at Mound and participated at the launch site.

EDUCATION: University of Dayton, 1947 - 1950
Lindsay Wilson Jr. College, 1939 - 1941
Numerous continuing education courses, including Value Engineering, Motivation Principles and Applications, Technical Presentation and Design, Emergency Operations Management, Value Analysis and Engineering, Hazardous Materials Training Course, Developing Leadership Skills, and Managerial Analytics

NAME: Whitney Hansen

AREA OF RESP: Maintenance

ASSOCIATION: Dolphin Enterprises

EXPERIENCE: 39 years

- U.S. Navy Experience
  - Thirty-two years in surface ship, conventional and nuclear submarines, and Naval Reserve assignments. Retired as Rear Admiral, USNR
- Civilian Corporate Experience
  - Seven years at Lockheed Missiles and Space Co. Engineering and management assignments in the nuclear rocket, research, and deep submergence programs.
  - Two years at General Electric Co., Atomic Power Engineering Division. Engineering and management assignments on commercial BWR projects.
  - Seven years at Exxon Nuclear Co. Management assignments in the nuclear fuel and related service areas.
- Appraisal/Consulting Experience
  - Uranium procurement for nuclear utilities
  - Management consulting for nuclear utilities
  - Work-for-others and training assignments for the Idaho National Engineering Laboratory
  - Thirty-two appraisals, audits, and inspections for the Nuclear Regulatory Commission

EDUCATION: M.B.A., University of Santa Clara
B.S., General Engineering, U.S. Naval Academy

OTHER: Qualified to operate and supervise the operation of the S-1-W, S-3-W, and S-5-W reactor plants
Qualified Engineer Officer, naval nuclear propulsion plant
Qualified for command of submarines

NAME: Don L. Hobrock

AREA OF RESP: Experimental Activities and Site/Facility Safety Review

ASSOCIATION: Private Consultant

EXPERIENCE: 25 years

- Member of DOE Secretary's Tritium Task Group
- Consultant to nuclear organizations
  - EG&G Mound
  - Sandia National Laboratories, Livermore
- EG&G Mound, Mound Plant
  - Senior Fellow, Tritium Technology. Responsible for R&D in tritium solid storage, high pressure technology, tritium technology, design and operations of nuclear facilities, and process technology.
- Monsanto Research Corporation, Mound Plant
  - Senior Fellow/Fellow, Tritium Technology. Responsible for R&D in tritium solid storage, tritium technology, design and operation of nuclear facilities/processes/equipment, and process technology. Program manager for Kyle project which required the completion of decommissioning and decontamination of a nuclear facility, installation of a $40 million tritium facility, and conducting and directing R&D, Process Development, and Process Engineering. Developed processing technology for tritium and uranium.
  - Manager, Ceramic Section. Responsible for the technology base, equipment, and facilities for development and production of ceramic, glass ceramic, and glass components.
  - Senior Research Specialist. Conducted R&D for reservoir surveillance operation. Program manager for the W71 and the W79 Programs which required decommissioning and decontamination of tritium facilities. Responsible for developing and installing the initial technology base for the double containment of tritium concepts.
  - Group Leader, Senior Research Chemist, Analytical. Responsible for conducting development and routine results in the areas of tritium and inert gas isotopic analyses via mass spectrometry, plutonium analyses with mass spectrometers and emissions spectrometers, and materials evaluation by metallographic techniques.

EDUCATION: Ph.D., Physical Chemistry, Kansas State University
M.S. in Ed., Chemistry, Western Illinois University
B.S. in Ed., Chemistry, Western Illinois University

NAME: David M. Johnson

AREA OF RESP: Auxiliary Systems

ASSOCIATION: WASTREN, Inc.

EXPERIENCE: 21 years

- Consultant
  - As a Senior Engineer with WASTREN Inc., major responsibilities include performing nuclear facility SAR's, operational and performance assessments and technical safety appraisals with specialized support in auxiliary systems, maintenance and conduct of operations. Tiger Team efforts include the Argonne West Facility at INEL.
- U.S. Nuclear Regulatory Commission, Region I
  - As a Resident Inspector, performed inspections and oversight at commercial nuclear facilities including Three Mile Island Unit 1 and Beaver Valley Nuclear Power Station. Responsibilities included preparing of monthly reports and authoring or co-authoring several Systematic Assessment of Licensee Performance Reports.
  - As a Reactor Engineer in the Region I USNRC office, responsibilities, included coordinating 10 CFR Part 50 license change applications and reviewing technical specification change requests.
- U.S. Department of Defense
  - As a Test Engineer at several U.S. Naval Shipyards, responsibilities included supervising various maintenance and test activities for Naval Nuclear Submarines in overhaul periods. Duties also included conducting training for prospective Test Engineers and qualifying in the Navy basic instructor training program.

EDUCATION: B.S., Mechanical Engineering, University of Nebraska

NAME: Ernest W. Johnson

AREA OF RESP: Operations (Tritium)

ASSOCIATION: Private Consultant

EXPERIENCE: 27 years

- Technical Expert under contract to Oak Ridge Associate Universities and EG&G Idaho
- Participant on 12 earlier Technical Safety Appraisals and Tiger Teams
- Consultant to DOE in aerospace, facility, and transportation nuclear safety
- Member of Federal Emergency Response Management Assistance Program Teams for Galileo and Ulysses launches
- Consultant to EG&G-Mound in numerous technical and programmatic areas
- Team member for the DP-9 Diagnostic Evaluations of Maintenance at Y-12 and Engineering Support at Pantex
- Monsanto Research Corporation, Mound Facility
  - Aerospace and Terrestrial Heat Source Design, Testing, and Safety Areas
  - Plutonium-238 and -239 technical studies for NRC and DOE
  - SAR and SARP generation for various Plutonium-238 systems
  - Project Manager for numerous heat-source projects
  - Building Manager for two plutonium facilities at Mound

EDUCATION: Ph.D., Physical Chemistry, State University of Iowa
M.S., Physical Chemistry, Iowa State University
B.S., Chemistry/Mathematics, Wisconsin State College

OTHER: American Chemical Society
American Society for Metals (ASM International)
Alpha Chi Sigma
Phi Lambda Upsilon

NAME: Olga Jones

AREA OF RESP: Coordinator

ASSOCIATION: Lawrence Livermore National Laboratory

EXPERIENCE: 35 years

- Lawrence Livermore National Laboratory, Staff Member, Director's Office
  - Site coordinator assistant for the DOE Tiger Team assessment, Lawrence Berkeley Laboratory
  - Coordinator for the DOE Tiger Team assessment, Idaho National Engineering Laboratory
  - Coordinator for the DOE Tiger Team Assessment, Oak Ridge National Laboratory
  - Administrative Coordinator for the DOE Tiger Team Assessment of the Lawrence Livermore National Laboratory. Report Coordinator for the Laboratory's response to the assessment.
  - Conference Coordinator for the International Conference "Electrical Power Needs of the Future" held at University of California, Berkeley.
- Magnetic Fusion Energy Program, Staff Assistant to the Associate Director
  - Assisted the Associate Director in all administrative matters.
  - Office Manager, personnel and salary management, supervisor, administrative personnel, established a publication section, implemented a word processing system and center, coordinated foreign travel, conferences, visits, assignments, tours.
- U.S. Civil Service Agencies
  - U.S. Air Force, Reese AF Base, Texas, Secretary to personnel officer; Barksdale AFB, Louisiana, Secretary to wing personnel officer
  - U.S. Army, Camp Gordon, Georgia, Secretary to Rehabilitation Training Officer

EDUCATION: University of California, San Jose State. Chabot College, business administration courses
American Management Association and U.S. Civil Service Commission courses in supervision, word processing, and computer-related courses.

OTHER: Recipient of California Tri Valley American Business Women's Association Boss of the Year Award

NAME: Donald E. Kelley

AREA OF RESP: Fire Protection

ASSOCIATION: U.S. Department of Energy Field Office, San Francisco

EXPERIENCE: 35 years

- 28 years of professional safety and fire protection experience with the U.S. Civil Service
  - U.S. Department of Health and Human Services Office of Facilities Engineering
  - U.S. Department of Labor, OSHA, Office of Standard
  - National Aeronautics and Space Administration (NASA), Kennedy Space Center, FL
- U.S. Civil Service Science and Engineering Ratings:
  - GS 801 General Engineer
  - GS 803 Safety Engineer
  - GS 804 Fire Protection Engineer

EDUCATION: B.S., Marine Engineering, California Maritime Academy
Graduate Studies School of Engineering, Florida Institute of Technology

CERTIFICATION: Registered Fire Protection Engineer, State of CA
Registered Safety Engineer, State of CA
Certified Safety Professional (CSP)

OTHER: Member Society of Fire Protection Engineers
Former NFPA Code Committee Member, "National Fire Prevention Code" Committee member DOE Headquarters Fire Safety Group
Former Advisory Committee Member, Uniform Building Code, District of Columbia, Washington, DC

NAME: Phillip E. McBeath

AREA OF RESP: Personnel Protection

ASSOCIATION: EG&G Idaho, Inc.

EXPERIENCE: 17 years

- Private Consultant
  - Safety, and health audits for Westinghouse at Savannah River in Reactor and Tritium facilities.
  - Fire Protection Appraisal for EG&G at the Solar Energy Research Institute.
- E.I. DuPont
  - Safety Engineer. Responsible for DOE and OSHA compliance audits for worker safety and fire protection.
  - Manager of Industrial Safety and Fire Protection. Responsible for Savannah River Operations safety and fire protection program.
- Westinghouse
  - Manager of Industrial Safety and Fire Protection programs at Savannah River.

CERTIFICATION: Certified Safety Professional

EDUCATION: Attended Augusta College

OTHER: Member, American Society of Safety Engineers
Member, National Fire Protection Association

NAME: Floyd L. McManus

AREA OF RESP: Training and Certification

ASSOCIATION: COMEX Corporation

EXPERIENCE: 31 years

- COMEX Corporation
  - Reactor Engineer: Provide technical support to U.S. Department of Energy (DOE) and U.S. Nuclear Regulatory Commission in the fields of training, emergency preparedness, operations, and maintenance
  - Team member, Technical Safety Appraisals at the Hanford Site and Idaho National Engineering Laboratory (INEL)
- U.S. Navy
  - Inspector with the Pacific Fleet Type Commanders Mobile Training Team
  - ComNavSurfPac/ComNavAirPac-Representative at Puget Sound Naval Shipyard
  - Technical Assistant, USS Enterprise, responsible for reactor instrumentation and control systems and reactor electrical generation and distribution
  - Submarine qualified, USS Abraham Lincoln, SSBN 602 (Gold)
  - Qualified Instructor, Engineering Advanced Training Unit, New London, Connecticut
  - Staff Instructor, nuclear submarine prototype, Windsor, Connecticut
  - Qualified reactor operator and electrical operator, submarine prototype, Windsor, Connecticut

EDUCATION: U.S. Navy Nuclear Prototype, Windsor, Connecticut
U.S. Navy Nuclear Power School, Bainbridge, Maryland

NAME: Dale E. Minner, M.D.

AREA OF RESP: Medical Services

ASSOCIATION: Oak Ridge Associated Universities

EXPERIENCE: 30 years

- Director of occupational medical programs for 5 years at ORAU, EG&G Idaho, Inc., and, AT&T Consumer Products.
- Occupational physician for 4 years at EG&G Idaho, Inc.
- Medical and medical management consultant for 2 years with Dale E. Minner, M.D. P.S., performing appraisals of medical cost and quality.
- Emergency department physician 6 years at St. Peter and Tacoma General Hospital in Olympia and Tacoma, Washington.
- Aviation and aerospace medicine for 6 years with the U.S. Army Reserve and the Boeing Companies.
- Chief, medical systems development and medical industry manager for 5 years with the Boeing Aerospace Company and Boeing Computer services.
- Family practice of medicine for 2 years at Forks, Washington.

EDUCATION: Fellowship in Environmental Health, School of Public Health and Community Medicine, University of Washington
M.D., Loma Linda University
B.A., Chemistry, Walla Walla College

OTHER: Fellow, American College of Occupational Medicine
Licensed Physician in Washington, Idaho, and Oregon

NAME: Robert W. Powell

AREA OF RESP: Operations

ASSOCIATION: Private Consultant

EXPERIENCE: 45 years

- Participated in DOE Technical Safety Appraisals for the N-Reactor, the Savannah River Reactors, the Advanced Test Reactor, the Savannah River Waste Management Area, Lawrence Berkeley Laboratory, the Hanford site, and the Argonne National Laboratory-W located at the Idaho National Engineering Laboratory.

- Participated in the Graphite and Confinement review of the N-Reactor.

- Serve on the National Institute of Standards and Technology Reactor Safety Review Committee.

- Conduct Safety Reviews of the Oak Ridge National Laboratory Class B reactors, and Brookhaven National Laboratory Reactors.

- Brookhaven National Laboratory

  - Manager of Reactors Division
  - Project Engineer for Medical Research Reactor, start-up responsibility
  - Design Committee for High Flux Beam Reactor, start-up responsibility
  - Design Committee and start-up responsibility for Brookhaven Graphite Research Reactor
  - Chairman, Brookhaven National Laboratory Safety Committee (6 years)
  - Member, Reactor and Critical Experiments Safety Committee (20 years)
  - Status - Senior Engineer (with tenure)

- DuPont Company

  - Supervisor, Cellophane Production
  - Military Explosive Division
  - Senior Supervisor, TNT
  - Senior Supervisor, DNT
  - Senior Supervisor, X-10 Reactor

EDUCATION: B.S., Chemical Engineering, Auburn University

OTHER: Fellow, American Nuclear Society
Chairman, Reactor Operations Division of American Nuclear Society

NAME: Janis G. Ramey

AREA OF RESP: Technical Editor

ASSOCIATION: EG&G Idaho - Private Consultant

EXPERIENCE: 29 years

- Freelance technical writer for 21 years: Clients are large and small companies in a variety of technical fields including, among others, nuclear engineering, software development, process control, instrumentation, and laboratory equipment

- Instructor: Specializing in teaching engineers, programmers, technicians, and managers how to write reports, proposals, manuals, and letters

- University teaching experience:

  - University of Pittsburgh: Taught science writing courses to undergraduate science majors
  - Chatham College, Pittsburgh: Taught technical writing to graduate scientists through a special program funded by the National Science Foundation

- Appraisal experience

  - Idaho National Engineering Laboratories, Tiger Team Editor, 1991
  - Oak Ridge National Laboratory, Tiger Team Editor, 1990

- Previous experience

  - Senior Technical Writer, McGraw-Edison Power Systems Division
  - Engineering Writer, Westinghouse Control Systems
  - Technical Editor, Crucible Steel Company Research Center
  - Technical Cataloger, Bettis Atomic Power Laboratory
  - Technical Writer, U.S. Bureau of Mines, Coal Research Center

EDUCATION: M.A., English, Carnegie-Mellon University
B.S., Technical Writing and Editing, Carnegie Mellon University

OTHER: Society for Technical Communication
Award of Excellence, 1990-91 and 1988-89 Publications Competitions, Society for Technical Communication

NAME: Nancy L. Sanderson

AREA OF RESP: Report Coordinator

ASSOCIATION: EG&G Rocky Flats, Inc.

EXPERIENCE: 23 years

- U.S. Department of Energy (contractor employee)
  - Report Coordinator for Tiger Team Assessments at the Idaho National Engineering Laboratory, Savannah River Plant, Pinellas Plant, and West Valley Demonstration Project
  - Report Coordinator for two Criticality Safety Reviews at the Rocky Flats Plant
  - Report Coordinator for Technical Safety Appraisals at the Rocky Flats Plant (four separate appraisals), Paducah Gaseous Diffusion Plant, Los Alamos National Laboratory (TA-55), Lawrence Livermore National Engineering Laboratory (Tritium Facility), Idaho National Engineering Laboratory (Advanced Test Reactor), and Hanford (Fast Flux Test Facility)
- EG&G Rocky Flats, Inc.
  - Manager, Nuclear Safety Administrative Support
  - Audit Response Coordinator, Nuclear Safety Department
- Rockwell International, Rocky Flats Plant
  - Corrective Action Response Coordinator, Health, Safety, and Environment Department
  - Administrative Assistant to the Director of Health, Safety, and Environment Department
  - Thirteen years experience with Rocky Flats programs: Wind Systems Program; Health, Safety, and Environment; Respiratory Protection; and Nuclear Safety

EDUCATION: B.A., Management of Human Resources, Colorado Christian University
Metropolitan State College, Denver, Colorado
Harding University, Searcy, Arkansas
Numerous administrative, computer, and management training courses

NAME: Jack M. Selby

AREA OF RESP: Radiological Protection

ASSOCIATION: Pacific Northwest Laboratories

EXPERIENCE: 37 years

- Senior Program Manager/Level V Scientist
- Participant in eight DOE Technical Safety Appraisals and Tiger Teams
- Member, four DOE Health Physics Program Appraisal Teams
- Manager, DOE Health Physics Support and Assistance Program
- Manager, technical assistance team to the NRC in health physics and emergency preparedness appraisals of operating power reactors
- Manager, Hanford Radiological Calibration Facility
- Manager, Battelle Radiation Protection Group
- Manager, Hanford exposure evaluation and occupational exposure records
- Manager, Hanford emergency preparedness program
- Technical contributor in radiation and environmental monitoring programs and Health Physics research with emphasis in radiological protection, instrument test and calibration, and internal dosimetry
- Helped design a commercial Nuclear Uranium facility and a Plutonium fuel facility, developed the health physics program, and was in charge of obtaining an operating NRC license

EDUCATION: B.S., Chemistry, Kansas State University
Graduate Studies, University of Washington

OTHER: Faculty appointment at Harvard School of Public Health since 1979
Certified by the American Board of Health Physics, 1962
Recertified 1989
Received Health Physics Society Founders Award
Elected Fellow of the Health Physics Society
Member and/or Chairperson of ANSI N42.1, ASTM E10.04, IEC TC 45B, NEA, ISO, and IAEA Standards Committees

NAME: Richard D. Silvey

AREA OF RESP: Worker Safety

ASSOCIATION: Westinghouse Hanford Company

EXPERIENCE: 4 years

- Industrial Hygiene
  - Administer Asbestos and Hazardous Waste Operations Programs. Perform various Industrial Hygiene reviews. Also, perform audits and appraisals of specific programs and facilities for compliance with applicable codes and standards.
- Industrial Safety Engineer
  - Evaluated field conditions, recommended corrective actions, performed accident investigations, provided document review to ensure compliance with regulatory codes and standards.
- Industrial Safety Technician
  - Researched various regulatory codes and standards to ensure compliance in all Westinghouse Hanford Operations safety standards.

EDUCATION: (Special Training)
NFPA Life Safety Code
OSHA Safety and Health Course for Other Federal Agencies
NQA Qualification for Audits and Appraisals
Blasting and Explosive Safety
Hazardous Materials Packaging and Shipping
Generator Hazardous Materials Training
Root Cause Analysis II
On-the-Job Training Instructor

CERTIFICATIONS: Asbestos Certified Supervisor, Washington Labor & Industries
Asbestos AHERA Building Inspector and Mangement Planner, Washington Labor and Industries
40-Hour Hazardous Waste Worker, Westinghouse Hanford Operations

NAME: R.J. "Nick" Wade

AREA OF RESP: Quality Verification

ASSOCIATION: WASTREN, Inc.

EXPERIENCE: 25 years

- Program Manager of WASTREN, Inc. Responsible for implementing quality assurance programs, implementing procedures, and maintaining quality programs including:

  - ASME NQA-1 and 2
  - Environmental QA
  - Software QA
  - Supplier Evaluation
  - Operational Readiness Review
  - Reliability, Availability, Maintainability, and Inspectability (RAMI)
  - Statistical Process Control
  - DOE Orders

- EG&G Idaho, Inc., Quality Engineering Manager, acting in the capacity of the New Production Reactor (NPR) Department Quality Manager. Other positions included work on the Tennessee Valley Authority (TVA) Weld Evaluation Project, Watts Bar Nuclear Plant which included Deputy Manager of Performance Assurance Tennessee Operations acting as Project Manager on Unit 2 and Unit 1. Additionally held positions as Inspection/Examination Manager and Technical Programs Manager.

EDUCATION: INEL Degree Program, University of Idaho

OTHER: Member of American Welding Society (AWS)
Certified Welding Inspector #86030101

NAME: Doris E. White

AREA OF RESP: Packaging and Transportation

ASSOCIATION: Westinghouse Hanford Company

EXPERIENCE: 15 years

- Westinghouse Hanford Company

  Senior Engineer, Packaging, Shipping and Waste Safety Assurance
  - Conduct sitewide facilities performance-based compliance and effectiveness audits/appraisals of environmental, hazardous materials, waste management, quality assurance and chemical processing control systems.
  - Perform safety overview of hazardous material and waste packaging and shipping program implementation.
  - Evaluate corrective action plans for adequacy and root cause identification.
  - Working member of the Health and Safety Assurance Training Task Team.

- Rockwell Hanford Operations

  Quality Assurance, Audit Program Administration Team Leader
  - Established Lead Auditor qualification and documentation system.
  - Coordinated the sitewide Integrated Audit/Appraisal Committee.
  - Developed Quality Assurance and Safety audit procedures.
  - Administered a centralized system for supplier information.
  - Instructed auditor training courses to DOE, site contractors and EG&G, Idaho.
  - Developed auditor training aids and examination requirements.
  - Acted as Rockwell liaison to DOE-RL for Judgment of Needs.
  - Evaluated off-site suppliers and performed technical reviews of procurement packages and supplier quality programs.

- Joint Center for Graduate Study

  - Reviewed course proposals, developed course budgets, and negotiated instructor contracts for continuing education programs.
  - Facilitated the Central Washington State University Pilot Interpersonal Skills Program.

EDUCATION: A.S., Quality Assurance/Quality Control, Columbia Basin College

OTHER: ASQC Certified Quality Auditor (CQA #123)
Member, ASQC Auditing Technical Committee

Appendix A-3-3

Biographical Sketches of Accelerators Subteam Members

NAME: Oliver D. T. Lynch, Jr.

AREA OF RESP: EH Senior Manager

ASSOCIATION: U.S. Department of Energy, Office of Performance Assessment

EXPERIENCE: 26 years

- U.S. Department of Energy, Germantown, MD
  - Director, Safety Inspections Division, OSA
- U.S. Nuclear Regulatory Commission, Rockville, MD
  - Radiation Measurements and Health Effects Section Chief
  - Standardization and Decommissioning Section Chief
  - Safeguards and Non-Power Reactors Section Chief
  - Radiation Protection Section Leader
  - Senior Operating Reactor Project Manager
  - Environmental Assessment Section Chief, TMI Program Office
  - TMI Special Inquiry Group (Rogovin)
  - Senior Environmental Project Manager
- International Atomic Energy Agency
  - Technical Working Group Leader, Vienna, Austria
  - Instructor, Cairo, Egypt
- General Dynamics, Electric Boat Division, Groton, CT
  - Chief, Radiological Control Health Engineering
- U.S. Atomic Energy Commission, Las Vegas, NV
  - Radiological Specialist
- San Diego State University, San Diego, CA
  - Assistant Radiological Safety Officer

EDUCATION: M.S., Nuclear Physics, San Diego State University
B.S., Applied Physics, San Diego State University

OTHER: Member, Health Physics Society
Member, American Forestry Association
Sigma Pi Sigma
Author, Textbooks and Training Manuals, Small Craft Safety, Operations, and Navigation

NAME: Douglass S. Abramson

AREA OF RESP: Safety and Health Subteam Leader

ASSOCIATION: U.S. Department of Energy, Office of Performance Assessment

EXPERIENCE: 17 years

- U.S. Department of Energy, Germantown, MD
  - Assistant Subteam Leader for Technical Safety Appraisals at ETEC, METC, and SERI.
- U.S. Department of Energy, Assistant Secretary, Conservation and Renewable Energy, Washington, DC
  - Program Manager and Mechanical Engineer for Test Procedures and Energy Conservation Standards for central air conditioners, room air conditioners, refrigerator/freezers, humidifiers and dehumidifiers, fluorescent lamp ballasts, and television sets.
- National Institutes of Health, U.S. Department of Health and Human Services, Bethesda, MD
  - Team Leader for the design and construction of multimillion dollar renovation and new construction of medical facilities, research facilities, and animal facilities. Project Manager for the construction of the nuclear medicine cyclotron facility.
- U.S. Army, Corps of Engineers, United States and Europe
  - Captain, Commander of Engineer Company: Responsible for all activities including training, maintenance, and safety.

EDUCATION: B.S., Mechanical Engineering, Drexel University
Engineer Officer Basic Course and Engineer Officer Advanced Course, Fort Belvoir, Virginia
U.S. Army Command and General Staff College, Fort Leavenworth

NAME: Ronald E. Alexander

AREA OF RESP: Personnel Protection

ASSOCIATION: Environmental Management Associates

EXPERIENCE: 22 years

- Environmental Management Associates
  - Safety and Hazardous Material Management Consultant: Provide assistance for OSHA compliance, hazardous waste handling, environmental liability assessments, Safety Analysis Reports, permits, and Technical Safety Appraisals.
- Mason & Hanger - Silas Mason Co., Inc.
  - Departmental Scientist: Responsible for managing 34 professionals in the areas of health physics, industrial hygiene, environmental protection, and waste management.
  - Senior Health/Physicist/Industrial Hygienist: Responsible for supervision of health physics, industrial hygiene, and environmental protection personnel.
  - Area Safety Engineer: Responsible for performing industrial safety and explosive safety compliance reviews of weapons assembly area.

EDUCATION: B.S., Texas Tech University
Graduate Work, West Texas State University

NAME: John W. Arendt

AREA OF RESP: Packaging and Transportation

ASSOCIATION: John W. Arendt Associates, Inc.

EXPERIENCE: 48 years

- John W. Arendt Associates, Inc.
  - Senior Engineer: Provide technical assistance in the fields of (1) UF_6 handling, (2) packaging and transportation of hazardous waste and radioactive materials, (3) quality assurance, (4) standards and regulations, and (5) engineering and management consultation.
- JBF Associates, Inc.
  - Provide technical and management advice to the President in the areas of uranium enrichment, standards and regulations, waste management, packaging and shipping, reactor activities, and quality assurance.
- Nuclear Division, Union Carbide Corporation
  - Staff Engineer: Coordinated preparation of planning document on waste management and environmental problems at Y-12. Served on Y-12 Mercury Task Force and chaired Environmental Impact Committee.
  - Superintendent of Planning and Budgeting in Gas Centrifuge Program
  - Project Manager for UCC-ND Uranium Resource Evaluation, part of the National Uranium Resource Evaluation (NURE) Project
  - Superintendent of Physical Measurements, Inspection, and Metallurgical and Nuclear Engineering
  - Production Supervisor for in-plant handling, measuring, storing, packaging, and shipping of nuclear materials
- Manhattan Project, University of Chicago
  - Research Assistant

EDUCATION: B.S., Chemical Engineering, Marquette University

OTHER: Registered Professional Engineer, State of Tennessee, 1974
Certified Nuclear Materials Manager
Member, Nuclear Standards Board, American National Standards Institute (Chairman, N14 Committee)
Member, ANS, ASME, ASQC, ASNT, INMM, NSPE, TSPE, and ADPA

NAME: Russell B. Baumeister

AREA OF RESP: Worker Safety and Health (OSHA) Compliance

ASSOCIATION: U.S. Department of Energy Field Office, Nevada, Yucca Mountain Site Characterization Project

EXPERIENCE: 18 years

- Office of Civilian Radioactive Waste Management, Yucca Mountain Site Characterization Project, Las Vegas, NV

  - Safety and Occupational Health Specialist: Responsible for establishing a comprehensive safety and health program for 1200 people.

- Agricultural Research Service, Headquarters General Services Division, U.S. Department of Agriculture (USDA), Greenbelt, MD

  - Safety and Occupational Health Manager: Responsible for construction design review for life safety code concerns for projects at 130 research centers. Developed safety program directives for accident investigation and reporting, occupational medicine, construction design review, inspection and hazard abatement activities, and upgrade training for Safety and Occupational Health Managers working in the field.

- Pacific West Area, Agricultural Research Service, USDA

  - Area Safety and Occupational Health Manager: Responsible for 8 western states with 25 locations. Activities included laboratory inspections, hazard abatement development, construction design review, occupational medicine, employee assistance program, and development and oversight of the safety committee structure at each location.

- U.S. Department of Labor

  - Safety and Occupational Health Specialist, Compliance Officer: Responsible for inspections in general industry and construction. Areas of expertise involved heavy construction, metal industries, sawmills, wood manufacturing, timber (logging) operation, and oil and gas drilling operations.

- Other experience includes positions as a Ground Safety Manager, Missile Safety Technician, Traffic Safety Manager, and Safety Superintendent, plus a background in explosive safety and nuclear weapons programs.

EDUCATION: OSHA, Air Force, and private-sector technical programs

NAME: James L. Betts

AREA OF RESP: Fire Protection

ASSOCIATION: Reynolds Electrical & Engineering Company

EXPERIENCE: 18 years

- Reynolds Electrical & Engineering Co., Las Vegas, NV

  - Engineering and Analysis Group Leader for Occupational Safety and Fire Protection: Responsible for directing/supervising the fire protection engineering and safety engineering analysis program under the jurisdiction of the Department of Energy, Nevada Operations.

- University of Texas Health Science Center, Houston, TX

  - Fire and Safety Coordinator: Responsible for the "grass roots" development, implementation, and coordination of entire fire and safety program for 4200 employees and students. Taught OSHA and industrial/fire safety courses at Houston Community College on an adjunct basis.

- St. Luke's Episcopal Hospital, Texas Children's Hospital, and the Texas Heart Institute, Houston, TX

  - Director of Safety: Administered the loss control program for large hospital complex that included 3500 employees. Special emphasis was placed on compliance with Life Safety Code.

EDUCATION: B.S., Psychology, University of Houston
A.A.S., Fire Protection and Safety, Houston Community College

OTHER: Certified Safety Professional

NAME: Richard V. De Rocher

AREA OF RESP: Quality Verification

ASSOCIATION: Brookhaven National Laboratory

EXPERIENCE: 23 years

- Reactor Division, Brookhaven National Laboratory
  - Quality Assurance Engineer: Verify compliance with Department of Energy, Brookhaven National Laboratory, and Reactor Division requirements. Perform audits, surveillances, and document reviews. Coordinate responses to Technical Safety Appraisal concerns.
- Long Island Lighting Company
  - Quality Assurance Engineer, Shorham Nuclear Power Plant: Significant activities included interfacing with inspectors for the Nuclear Regulatory Commission, performing audits, reviewing documents, trend analysis, and administering the Quality Assurance Department's Measuring and Test Equipment Program.
- Narda Microwave
  - Microwave Engineer: Participated in the development of new products and coordinated the production and testing of special orders. Worked with the Production Department to resolve problems with existing products.
- Dorne and Margolin
  - Assistant Quality Control Manager: Supervised the electrical test, inspection, and calibration sections. Instituted a change in swept frequency techniques and established a second shift to eliminate backlog in the electrical test section.
- U.S. Air Force
  - Weapons Control System Technician for F-105 aircraft

EDUCATION: B.T., Electrical, Mechanical, Computer Technology, New York Institute of Technology

OTHER: Certified Quality Engineer, American Society for Quality Control

NAME: Anthony N. Fasano

AREA OF RESP: Auxiliary Systems

ASSOCIATION: Private Consultant

EXPERIENCE: 38 years

- Consultant to private utilities operating nuclear reactor power generation facilities and to state and Federal agencies (7 years). Activities included appraisals, inspections, audits, evaluations, and development of programs (e.g., maintenance, quality assurance, operation, nondestructive analysis, drug and alcohol fitness for duty, prudency, allegation and concerns, self-assessments based on NRC SALP, Maintenance Rule, performance-based quality assurance, and power ascension).

- AEC/NRC (1971-1984): Served in various positions associated with the Inspections and Enforcement branch. Activities included the following:

  - Inspected and reviewed system preoperational tests of primary and auxiliary systems (prerequisites, preoperational, startup, and ascension to power);
  - Inspected conduct of operations at nuclear power plants;
  - Conducted performance appraisals as team member of the Performance Appraisal Team and investigation of the TMI-2 accident (NUREG 0600); and
  - Provided oversight of the I&E area for TMI site; served as Section Chief monitoring operations, cleanup, ALARA, health physics, and waste accumulation and shipment.

- Associated with the Department of Defense in the design, testing, operation, and engineering of the Nuclear Engineering Test Facility (1958-1971). Involved in nuclear experiment reviews; facility design; and development, operation, and management of the Engineering Division.

- Associated with Brookhaven National Laboratory (BNL) and Department of Defense (1953-1958). Involved in facility design for experiments at the BNL Graphite Reactor, neutron detector development, and experiment design assistance.

EDUCATION: M.Ch.E., New York University
B.Ch.E., Clarkson College of Technology

NAME: Denelle E. Friar

AREA OF RESP: Training and Certification

ASSOCIATION: Westinghouse Hanford Company

EXPERIENCE: 18 years

- Nuclear Safety
  - Nuclear safety reviews, wrote safety and appraisal manuals, represented the Nuclear Safety Office during Department of Energy and NRC audits, coordinated annual facility appraisals, analyzed system safety, inspected and wrote safety infraction reports, trained employees and safety staff, and worked with operations at the shop-floor level to set realistic safety rules.
- Safety Engineering
  - Established safe operating limits and wrote specifications and postings using operators' terminology. Worked with operators, management, engineering, and quality assurance on special teams. Trained hundreds of employees, from managers to janitors, in nuclear safety. Negotiated changes in limits to maintain safe but flexible operation. Developed manuals, reported safety infractions and corrective actions, and wrote environmental evaluations. Principal investigator in two human factors engineering studies of reactor control rooms.

EDUCATION: M.B.A., Finance, University of Washington
B.S., Physics, California State University

OTHER: Board Member, Nuclear Criticality Safety Division, American Nuclear Society
Member, Training Core Team, DOE-HQ Nuclear Criticality Technology and Safety Conference
Member, Human Factors Society

NAME: Walter L. Futrell, Jr.

AREA OF RESP: Fire Protection

ASSOCIATION: Private Consultant

EXPERIENCE: 21 years

- Private Consultant
  - Provide fire protection assistance to Argonne National Laboratory and DOE's Office of Safety Appraisals.
- NUS Corporation, Aiken, SC
  - Fire Protection Engineer: Provided technical assistance to DOE's Savannah River Office. Reviewed design documents for compliance with DOE Orders, reviewed SARs and OSRs, monitored operating contractor's performance, performed field surveys of facilities, and reported findings to DOE management.
- Argonne National Laboratory-West, Idaho Falls, ID
  - Fire Protection Engineer: Responsible for fire protection program at ANL-W facilities, including EBR-II (a LMBFR), hot fuel manufacturing facilities, test reactors, and support facilities. Performed fire protection evaluations of facilities, developed 5-year corrective action plan in response to TSA, reviewed SARs and OSRs, monitored fire system testing and maintenance program, and briefed management on program status.
- U.S. Department of State, Washington, DC
  - Fire Protection Officer: Performed fire protection evaluations of overseas embassies, consulates, and missions.
- Assistant Professor (Fire Protection Technology)
  - Responsible for various teaching assignments and coordination responsibilities in fire protection technology.
- North Carolina Community College System (Fire Training Coordinator)
  - Responsible for providing fire training to county and municipal fire departments in service area.

EDUCATION: M.A., Public Administration, Sangamon State University
B.T., Technical Education, Appalachian State University
A.A.S., Fire and Safety Engineering, Rowan Technical Institute

OTHER: Member, National Fire Protection Association

NAME: Philip J. Grant

AREA OF RESP: Technical Support

ASSOCIATION: WASTREN, Inc.

EXPERIENCE: 28 years

- Vice President, WASTREN, Inc., Germantown, MD
  - Supported DOE EM-30/50 for Waste Isolation Pilot Plant and generator site audits, Greater Class C waste studies, transportation needs assessments, and regulatory compliance and roadmap development.
  - Supported DOE-EH in Tiger Team/TSAs at INEL, LANL, and ANL-W. Assisted selective tritium facility performance and safety assessments.
  - Supported performance and regulatory compliance assessments at DOE's West Valley Nuclear Service (WVNS) and INEL PREPP facilities.
  - Provided D&D, SAR, and licensing support to GPUN and TMI.
- EG&G-IDAHO at INEL and TMI, Middletown, PA
  - Program Manager, TMI-2 Recovery: Responsible for defueling support, reactor accident analysis, fuel and waste treatment and transportation programs, D&D, and technology transfer.
  - Program Manager, Spent Fuel/HLW programs for OCRWMs rod consolidation and cask development; Program Manager, RI/FS remediation programs at Watertown Arsenal, MA.
  - Readiness review and operations assessments for several DOE-INEL waste-processing and fuel transportation programs.
- U.S. Nuclear Regulatory Commission, Bethesda, MD
  - Branch Chief, TMI Technical Support, NRR: Respons ible for development of programmatic EIS and SARs from major cleanup activities with assessments and inspections of licensees operations.
  - TMI Action Plan (NUREG 0737) Project Coordinator: Responsible for lessons learned, facility/systems modifications, equipment performance, emergency planning, and accident sampling requirements.
  - Development and implementation of 10 CFR 51 on NEPA compliance and development of EA and EIS documents.

EDUCATION: M.S., Business Administration, George Washington University
B.S., Chemistry, University of Pittsburgh

OTHER: Member, American Nuclear Society and Committees on Accident Sampling Equipment and Analysis

NAME: William J. Kehew

AREA OF RESP: Quality Verification

ASSOCIATION: U.S. Department of Energy Field Office, Chicago

EXPERIENCE: 31 years

- U.S. Department of Energy
  - Quality Assurance Manager, Chicago Operations Office Special Assignments include the following: (1) develop and implement a DOE quality assurance program for EM-343, Waste Vitrification Projects Office; (2) establish, develop, and implement a formal DOE Quality Assurance Program at DOE Rocky Flats Office; and (3) serve as Acting Director for QA, Office of Civilian Radioactive Waste Management/RW-30.
  - Quality Assurance Manager, Repository Technology and Transportation Division
  - Quality Assurance Director, Idaho Operations Office
- Westinghouse, Nuclear Fuel Division, Senior Quality Assurance Engineer
- General Atomic Corporation, Nuclear Quality Assurance Auditor
- Honeywell Information Systems, Lead Audit Engineer/Staff to the Director of Quality Assurance
- Martin Marietta Corporation, QA Construction Engineer

EDUCATION:
M.B.A., National University, San Diego, California
B.S., Quality Assurance, National University, San Diego, California
A.S., QA and Reliability Management, San Diego Community College

OTHER:
Former Vice Chairman, ASQC, San Diego Section
Vice Chairman, ASME NQA Committee Working Group on Decommissioning
Member, ASQC Committee for Third Edition of Matrix of Nuclear Quality Assurance Program Requirements
DOE Liaison Member to the National Academy of Sciences, Committee on Inspection for Quality Control on Federal Projects
Former Member, ASQC's Energy Division Executive Committee for Auditing
ASQC Certified Quality Engineer
Registered Professional Engineer, CA

NAME: Michael D. Kinney

AREA OF RESP: Maintenance

ASSOCIATION: WASTREN, Inc.

EXPERIENCE: 19 years

- WASTREN, Inc., Hanford, WA
  - Engineer: Supported DOE-HQ-EM34 in preparation of ORR modules for three Savannah River Plant facilities (1H Evaporator, Defense Waste Processing Facility, In-Tank Precipitation) for DOE startup readiness evaluation of the contractor ORR.
- Comanche Peak Steam Electric Station (CPSES), Glen Rose, TX
  - Room Area Completions Turnover Lead: Supervised/trained personnel in all phases of piping system/mechanical equipment acceptability walkdown. Verified acceptability of systems and mechanical components for maintenance to meet STA 810, and coordinated maintenance activities during room turnover to maintain system boundary integrity to meet STA-606.
  - System Readiness Engineer, Startup Team: Initiated matrix tracking program for completion of multi-process piping system restraints. Coordinated activities to maintain milestone dates. Supervised load balancing of piping systems for maintenance activities in accordance with STA-802.
- Diablo Canyon Nuclear Station, Avila Beach, CA
  - MN-5 Code Data Review Task Force Lead: Initiated a review task force format and supervised/trained personnel. Revised construction procedures as required to meet ANSI piping codes. Interfaced with ANII and ASME quality engineers to resolve interpretational differences, and established manpower requirements per client-scheduled milestones.
- St. Lulie #2 Nuclear Station, Jensen Beach, FL
  - Civil Construction Completion Supervisor: Supervised/trained personnel for all task force activities. Duties included initiating a fastener qualification program in accordance with AISC, 7th edition; coordinating with Project Manager and client; maintaining calibration program for mechanical and hydraulic torque sensing equipment; generating triplex logging system for inspection reports; and coordinating with NRC to prove traceability of work package system.

EDUCATION: A.A.A.S., Mechanical Engineering, Indian Hills Community College

OTHER: American Welding Society Certified Welding Inspector (AWS-CWI)

NAME: Steven Masciulli

AREA OF RESP: Radiological Protection

ASSOCIATION: Vertechs, Inc.

EXPERIENCE: 16 years

- Vertechs, Inc., Senior Specialist: Responsible for health physics, dose assessments, emergency planning, audits, appraisals, and computer applications. Served on Lawrence Livermore National Laboratory, Paducah Gaseous Diffusion Plant, Argonne National Laboratory, and Sandia National Laboratory Tiger Teams for DOE and participated on the EG&G/EM Environmental Audit Team.

- Cygna Group, Division Manager and Senior Technical Specialist: Responsible for health physics, emergency planning, quality assurance, and computer applications.

  - Performed numerous investigations, audits, and appraisals of applied health physics and radiological environmental and effluent monitoring programs. Served on DOE Tiger Team for the Nevada Test Site.
  - Developed and ran data base and technical computer programs for offsite dose assessment, radiological effluent monitoring, control room habitability, and shielding analysis. Supervised radiological environmental-monitoring laboratory.

- New York Power Authority

  - Senior Radiological Appraisal Specialist: Responsible for developing and implementing appraisal program for health physics and radiological effluent and environmental monitoring programs.
  - Supervisory Radiological Engineer: Supervised a group of radiological engineers and responsible for coordination, development, and implementation of health physics and environmental programs.

- Consolidated Edison Company of New York, Inc., Nuclear Environmental Monitoring Engineer

- General Dynamics Corporation, Electric Boat Division, Radiation Control Engineer

EDUCATION: M.S., Applied Science, New York University
B.S., Radiological Sciences, Lowell Technological Institute

OTHER: Certified Health Physicist (comprehensive and power reactor specialty)

NAME: Frederick M. McMillen

AREA OF RESP: Worker Safety and Health (OSHA) Compliance

ASSOCIATION: Private Consultant

EXPERIENCE: 32 years

- Private Consultant
  - Provide safety audits, industrial hygiene and environmental monitoring services, and ES&H hazardous waste operations inspections.
- Lawrence Livermore National Laboratory (LLNL)
  - Supervising Health and Safety Technologist: Trained and supervised Health and Safety Technologists to perform a full range of industrial hygiene, industrial safety, radiation, fire protection, and environmental monitoring duties.
  - Principal Health and Safety Technologist and Technical Specialist: Served on Emergency Response Teams. Inspected and participated in various high-explosive detonation projects involving radioactive and toxic materials. Responsible for respiratory protection equipment and instruction and maintenance of Self-Contained Breathing Apparatus equipment.
  - Lieutenant, LLNL Fire Department: Responded to emergencies. Supervised and trained the Emergency Response Team.
- U.S. Navy
  - Responded to structural and aircraft emergencies. Conducted routine fire prevention inspections.

EDUCATION: Certified Occupational Health and Safety Technologist, American Board of Industrial Hygiene and American Board of Certified Safety Professionals
Plutonium Radiation Worker Qualification, DOE Explosive Safety for Supervisors, Hazardous Waste Site and Supervisor Training

NAME: Leon H. Meyer

AREA OF RESP: Organization and Administration and Security/Safety Interface

ASSOCIATION: The LHM Corporation

EXPERIENCE: 38 years

- Technical expert under contract to Oak Ridge Associated Universities and EG&G Idaho, Inc. Served on 34 Technical Safety Appraisals for DOE/EH.

- Savannah River Plant, E.I. Du Pont de Nemours & Company, Aiken, SC

  - Program Manager: Responsible for safeguards and security, long-range planning, budget coordination, quality assurance, environmental control, energy conservation, and away-from-reactor spent fuel storage.

- Atomic Energy Division, E.I. Du Pont de Nemours & Company

  - Program Manager, Technical Division: Responsible for the Defense Waste Processing Facility and the LWR Fuel Reprocessing Design Project.

- Savannah River Laboratory, E.I. Du Pont de Nemours & Company, Aiken, SC

  - Assistant Director
  - Director, Separations Chemistry and Engineering Section
  - Research Manager, Separations Chemistry Division
  - Research Supervisor, Separations Engineering Division: Responsibilities in the areas of chemical separations; plutonium, uranium, and thorium processing; and tritium technology.

EDUCATION: Ph.D., Physical Chemistry, University of Illinois
M.S., Chemistry, Georgia Institute of Technology
B.S., Chemical Engineering, Georgia Institute of Technology

NAME: John A. Porter

AREA OF RESP: Experimental Activities and Site/Facility Safety Review

ASSOCIATION: Private Consultant

EXPERIENCE: 34 years

- Argonne National Laboratory (ANL)
  - Participated in DOE review and evaluation of design concepts for New Production Reactor.
- Westinghouse Savannah River Company
  - Managed processing plants for nuclear fuels and targets.
- E.I. Du Pont, Savannah River Plant
  - Held various professional and management positions in the Research & Development Laboratory and in production facilities at Savannah River, including manager of processing plants for nuclear fuels and targets, operator of analytical control laboratories supporting nuclear fuel reprocessing plants, manager of industrial hygiene and radiation protection functions, coordinator of environmental programs (including permitting, compliance monitoring, and remediation), and participant and manager in research and development activities related to the above.

EDUCATION: Ph.D., Physical Chemistry, Vanderbilt University
B.S., Chemistry, Clemson University

NAME: JaNae Shanahan

AREA OF RESP: Coordinator

ASSOCIATION: EG&G Idaho

EXPERIENCE: 6 years

- EG&G Idaho, Inc.
  - Currently assigned to the INEL Tiger Team Action Plan Project as the Technical Leader for the word processing.
  - Coordinated with DOE, Idaho Field Office, and DOE Headquarters in the production of the INEL Tiger Team Assessment Factual Accuracy Report.
  - Interacted with other Coordinators in the preparation of administrative support during the INEL Tiger Team Assessment. Technical Support Leader/Coordinator for word-processing support during INEL assessment.
  - Workleader of Electronic Publications Center, Technical Publications Department, which includes coordinating the production of technical reports (informal and formal). Interaction with Graphic Arts, Word Processing, and Printing for finalization of reports.
  - Served as Assistant to Unit Administrator.
  - Served as member of a Quality Circle that specialized in better interdivision communications to improve the quality of production and customer relations.

EDUCATION: Eastern Idaho Vocational Technical College

OTHER: Certificate of Applied Science in the Office Occupations Program
Legal Secretarial Certificate in the Legal Secretarial Program

NAME: Joseph J. Shonka

AREA OF RESP: Operations

ASSOCIATION: Shonka Research Associates, Inc.

EXPERIENCE: 23 years

- Shonka Research Associates, Inc.
  - Research Director: Direct private industry and Federal government contracts.
- Atlan-Tech, Inc.
  - Principal Scientist: Established Secondary Standards Laboratory for external radiation and for Radiation Monitoring System startup and support for power reactors.
- Private Consultant
  - Provided research for private industry and utilities.
- Brookhaven National Laboratory
  - Head of Health Physics Group supporting Accelerator Department
  - Head of Operational Health Physics Group supporting field offices at BNL
- Oak Ridge National Laboratory
  - Activities included theoretical and experimental work on neutron transport and dosimetry for use in radiotherapy and with neutron dose calculations.
- Georgia Institute of Technology
  - Responsibilities included radiation instrument calibration, activation analysis, neutron generator facility modifications, and teaching.
- Physical Sciences Laboratory
  - Participated in work involving manufacturing and calibration of ionization chambers.

EDUCATION: Ph.D., HP/NE, Georgia Institute of Technology
M.S., Physics, Georgia Institute of Technology
B.S., Math/Physics, St. Procopius College

NAME: Joseph J. Shonka (Continued)

OTHER: Health Physics Society
Sigma Xi
American Association of Physicists in Medicine

NAME: Joachim G. Stephan

AREA OF RESP: Radiological Protection

ASSOCIATION: Pacific Northwest Laboratory

EXPERIENCE: 29 years

- Pacific Northwest Laboratory (PNL)
  - Provides support to the Department of Energy (DOE) through the Health Physics Protection Overview Program at PNL. Primarily responsible for developing an implementation guide and technical manual for x-ray generating devices and sealed gamma-ray sources used for industrial and research applications at DOE sites.
  - Involved in the development of a health physics training course for users of x-ray generating devices. Active in the review and development of health physics operations and instrumentation procedures for uranium enrichment facilities and the review of DOE Orders. Participates as an NRC observer in emergency preparedness exercises held at commercial generating stations. Serves as a task manager for the Hanford Environmental Dose Reconstruction Program (HEDR).
  - Deputy Project Manager for the Hanford Defense Waste Environmental Impact Statement; Task Manager for the Basalt Waste Isolation Project (BWIP) and the Assessment of Effectiveness of Geologic Isolation Systems (AEGIS) programs; and Project Leader for the Bioenvironmental Safety Program conducted in support of nuclear underground tests.
  - Deputy Project Manager for U.S. Army program that uses advanced remote sensing technology and digital satellite data to assess environmental impacts on U.S. Army training sites.

EDUCATION: B.S., Geodetic Science, Ohio State University
Graduate Studies, Radiation Science, University of Washington

OTHER: Past Chair, Current Ex-officio, American Nuclear Society, Environmental Sciences Division
Member, Health Physics Society
Past Regional Chair, Member, American Society for Photogrammetry and Remote Sensing

NAME: Darla Treat Courtney

AREA OF RESP: Technical Editor

ASSOCIATION: Program Management, Inc.

EXPERIENCE: 11 years

- Program Management, Inc.
  - Provided editorial support in the preparation of several reports for investigations and site appraisals/assessments conducted by the Office of Environment, Safety and Health and the Office of Nuclear Safety (DOE Headquarters).
  - Assisted the Office of Environment, Safety and Health and DOE's Office of Nuclear Safety Policy and Standards in the preparation of documents related to international standards, Federal rules, and Departmental directives designed to regulate the operation of nuclear facilities.
  - Assisted in the preparation of industry-related litigation materials. Provided editorial and analytic support, reviewed documents, and consolidated data for client use.
- Carltech Associates, Inc.
  - Provided senior-level editorial support for the preparation of over 40 book-length toxicology and carcinogenesis reports published by the National Toxicology Program.
- Twenty-First Century Books
  - Served as Managing Director and Book Editor for a small publishing house.
- University of Maryland, College Park
  - Served as Editor of The Maryland Historian, a semiannual academic journal.
  - Worked as Staff Historian for an interdisciplinary project contracted by the U.S. Department of Interior to prepare a prototype for an interactive computerized encyclopedia on the Holocaust. Duties included extensive editorial support to the project team.
- Background includes teaching experience and editing organizational newsletters and fliers.

EDUCATION: M.A., European and Jewish History, University of Maryland
B.A., European and Jewish History, University of Maryland
A.A., Liberal Studies, Montgomery College
Doctoral Studies, History, University of Maryland

NAME: Stephanie G. West

AREA OF RESP: Coordinator

ASSOCIATION: Westinghouse Environmental Management Company of Ohio

EXPERIENCE: 17 years

- Westinghouse Environmental Management Company of Ohio, Fernald, OH
  - Specialist to Manager, Clean Air and Water Programs, Environmental Management.
  - Appraisal Coordinator for Technical Safety Appraisals associated with the Savannah River Site Tiger Team Assessment in March 1990, Hanford Site Tiger Team Assessment in June 1990, Sandia National Laboratories Tiger Team Assessment in May 1991, and Idaho National Engineering Laboratory in July 1991.
  - Coordinated Westinghouse Oversight Committee's meeting in March 1990 and served as member of Health & Fitness Task Team and Steering Committee.
  - Co-Chairman for Tour Route Open House 1990. Assignment entailed developing tour script, helping with introduction videos, training tour bus escorts and speakers, making presentations to bus company and DOE site office, and troubleshooting on the day of the event.
  - Word processor for TSAs from 1986 to 1988. Assigned at Headquarters; DOE Appraisal Coordinator in 1989. Interacted with DOE personnel as Word Processing Coordinator for Headquarters, DOE Health Physics Appraisal, and Technical Safety Appraisal at the FMPC.
  - Serve as primary member of emergency operations staff at Fernald and primary participant in "Joint Response 1988."
  - Secretary to DOE Site Manager and on special assignments.

EDUCATION: Miami University, Hamilton Branch - Accounting I
Secretarial Grid - Oxford, OH
Proof-a-Matics Instructor

Appendix A-3-4

Biographical Sketches of Other Selected Facilities and Activities Subteam Members

NAME: Richard H. Lasky

AREA OF RESP: Safety and Health Subteam Leader

ASSOCIATION: U.S. Department of Energy, Office of Performance Assessment

EXPERIENCE: 18 years

- U.S. Department of Energy
  - Safety and Health Subteam Leader for Tiger Team Assessments and TSA Team Leader
  - TSA Team Member: Responsible for the Fire Protection, Training and Certification, Facility Safety Review or Instrumentation and Control Systems functional areas of various appraisals.
- U.S. Nuclear Regulatory Commission
  - Electrical Engineer, Instrumentation and Control Systems
  - Equipment Qualification and Test Engineer, Environmental Qualification Inspections
- U.S. Department of the Navy, Norfolk Naval Shipyard
  - Nuclear/Electrical Engineer, Nuclear Engineering Department
  - Senior Engineer: Primary Plant Instrumentation, Primary Plant Controls, Nuclear Instrumentations, Steam Generator Water Level Control, Temperature Monitoring, Reactor Protection and Alarms, Radiation Monitoring, SG Chemical Cleaning (Electrical)

EDUCATION: B.S., Electrical Engineering, Norwich University

OTHER: Member, Institute of Electrical and Electronic Engineers

NAME: J. Kenneth Anderson

AREA OF RESP: Security/Safety Interface and Site/Facility Safety Review

ASSOCIATION: Private Consultant

EXPERIENCE: 40 years

- U.S. Department of Energy (contractor employee/consultant)
  - Participated in 11 Technical Safety Appraisals
- Westinghouse Hanford Company
  - Manager, Safety Assessment Office
  - Manager, Nuclear Safety
  - Executive Secretary and Member, Westinghouse Hanford Company Safeguards (Nuclear Facility Safety Review) Council
  - Classification Officer
- Nuclear facility (reactor and nonreactor) design analysis, operations analysis, and safety analysis
- Six years experience with experimental and analytical heat transfer and hydraulics

EDUCATION: B.A., Physics, University of Utah
Graduate courses in physics, mathematics, and reactor design analysis, University of Idaho

NAME: John M. Atwood

AREA OF RESP: Technical Support

ASSOCIATION: Private Consultant

EXPERIENCE: 41 years

- Private Consultant
  - Technical and management consulting related to nuclear facility operations and safety
- Westinghouse Hanford Company
  - Manager, Operations Assessment for Chemical Processing Division
  - Manager, Chemical Systems Technology; LMFBR, Fusion, Waste Management R&D Programs
  - Manager, Fuels Recycle; R&D related to reprocessing of fast reactor fuels
- Battelle, Pacific Northwest Laboratories
  - Manager, Chemical Engineering Section
- General Electric Company
  - Unit Manager, separations technology
  - Engineer, technical support for plutonium production reactors
- USAEC - Germantown
  - Chief, Gas Cooled Reactors Branch

EDUCATION: M.S., Chemical Engineering, University of Colorado
B.S., Chemical Engineering, University of Colorado

NAME: George P. Bailey

AREA OF RESP: Emergency Preparedness

ASSOCIATION: Advanced Systems Technology, Inc.

EXPERIENCE: 31 years

- Advanced Systems Technology, Inc.
  - Manager, Emergency Preparedness
- Stone & Webster Engineering Corp.
  - Senior Emergency Planning Analyst
- Public Service of Indiana
  - Senior Emergency Preparedness Licensing Engineer, Marble Hill, Nuclear Generating Station
- Louisiana Power & Light
  - Site Emergency Planning Coordinator, Waterford 3, Steam Electric Station
- Nuclear Energy Services, Inc.
  - Manager, Protective Services
- U.S. Air Force Retired
  - Onsite Controller, Nuclear Emergency Team

EDUCATION:
University of Philippines
Tunxis Community College
Hartford State Vocational College
NET Course, Sandia Base, New Mexico
Disaster Preparedness Instructor Course
CBR Warfare Instructor Course
Nuclear Weapons Basic Course
Nuclear Weapons Advance Recertification

OTHER:
AIF - Former Member, Subcommittee on Siting, Licensing and Emergency Preparedness
AIF - Former Member, Subcommittee on Safeguards
Member, Society of Fire Protection Engineers

NAME: J.R. "Joe" Barkman

AREA OF RESP: Auxiliary Systems

ASSOCIATION: Oak Ridge Chemical Consultants, Inc.

EXPERIENCE: 45 years

- Technical Safety Appraisals, DOE
  - DOE Tiger Team of Hanford Site (Technical Support) and INEL Site (Operations)
  - DOE Technical Safety Appraisal for the Idaho Chemical Processing Plant (Operations and Technical Support)
- PAI Corporation, Oak Ridge, TN
  - Pre-Technical Safety Appraisal at the Nevada Test Site (Operations and Maintenance).
- Analysas Corporation, Oak Ridge, TN
  - SAR System Review by DOE/ORO & Analysas Corporation
  - Subject matter expert during the preparation of a training manual for chemical supervisors in the Y-12 Plant.
- Union Carbide/Martin Marietta, Oak Ridge, TN
  - Y-12 Plant, Uranium Classification Guide
  - Program Manager for the upgrade and rebuild in the Enriched Uranium Recovery Improvements (EURI) Project and the Enriched Uranium Conversion Facility Modifications (EUCFM) Project.
  - Department Superintendent for the Chemical Services Department with responsibilities for the management of the uranium chemistry processes, the enriched and depleted foundries, special uranium scrap recovery and the production of uranium compounds for research and reactor use.
- Olin Industries, Mt. Braddock, PA
  - Chief Chemist for the production of dynamite.
- Tennessee Eastman Corporation, Y-12 Plant, Oak Ridge, TN
  - Chemical Process Supervisor for recovery processes associated with the electromagnetic separation units.
- Dupont Corporation, Childersburg, AL
  - Laboratory chemist for acid manufacture.

EDUCATION: B.A., Chemistry, Bridgewater College
The Chemistry of Powder and Explosives, University of Alabama

NAME: Orville C. Barr

AREA OF RESP: Experimental Activities

ASSOCIATION: M.H. Chew and Associates, Inc.

EXPERIENCE: 25 years

- M.H. Chew and Associates, Inc., Safety Consultants, Senior Engineer
- Principal Investigator, Pharos Technical Enterprises, electro-optic and laser systems analysis, design, integration, and documentation
- Applied Physicist, LLNL, Inertial Fusion, Laser operation, testing and management
- Electro-optic, reliability and safety engineer, laser isotope separation, Exxon Nuclear Company, Richland, WA
- Senior Staff member and group leader, Optics Division, U.S. Naval Research Laboratory, Washington, DC
- Project Engineer, Electronic Warfare Branch, U.S. Naval Air Systems Command, Washington, DC
- Data Processing Supervisor, Computer Operations and Computer Sciences, Michigan State University

EDUCATION: B.S.E.E., System Science, Michigan State University

NAME: William A. Brobst

AREA OF RESP: Packaging and Transportation

ASSOCIATION: The Transport Environment, Inc.

EXPERIENCE: 40 years

- The Transport Environment, Inc., President
  - Technical and management consulting in the field of hazardous materials transportation safety
- Director of Transportation Management, Department of Energy
  - Developed and managed the agency program for R&D and risk management in energy/fuels transportation
  - Set policy and managed transportation operations
- Chief of Transportation, Atomic Energy Commission
  - Developed and directed AEC's first centralized transportation management and R&D program
  - Set up a major package, vehicle, and safety system testing and risk analysis program
- Deputy Director, Office of Hazardous Materials, Department of Transportation
  - Directed DOT's technical program for hazardous materials safety regulatory development
- Nuclear Weapons Officer, U.S. Navy
  - Radiological physics and dosimetry

EDUCATION: Graduate work in Nuclear Engineering, University of Nevada and in Mathematics, University of Chicago
B.S., Chemistry, Northwestern University

OTHER: Certified by American Board of Health Physics
Past Member, National Academy of Sciences' Committee on Transportation of Hazardous Materials (former Chairman)
Past Chairman of the Transport Advisory Group, IAEA Independent Review Committee Member, TRU Waste Program

NAME: Norma B. Cameron

AREA OF RESP: Coordinator

ASSOCIATION: U.S. Department of Energy, Office of Performance Assessment

EXPERIENCE: 34 years

- U.S. Department of Energy
  - Participated as a Coordinator for Tiger Team Assessments at Sandia Laboratories, Livermore and Los Alamos National Laboratory.
  - Lead Secretary in the Office of Performance Assessment, responsible for overseeing the work of the Division secretaries.
  - Responsible for establishing and maintaining office procedures and keeping other staff apprised of any changes.
  - Assigned as Environment, Safety and Health representative on Task Force to update the Department of Energy Correspondence Handbook.
  - Assisted Chairman, DOE/NRC Task Force
- Energy Research and Development Administration (ERDA)
  - Lead Secretary for the office of Reactor Safety Coordination
  - Assisted Chairman, ERDA/NRC Task Force
- U.S. Atomic Energy Commission
  - Lead Secretary for the Office of Reactor Safety

EDUCATION: Numerous U.S. Department of Energy workshops and courses

NAME: Lance T. Cole

AREA OF RESP: Operations

ASSOCIATION: WASTREN, Inc.

EXPERIENCE: 16 years

- Hazardous and Nuclear Waste Management Consultant: Specialize in DOE waste management programs.

- Technical Support Principal Engineer for Hazardous and Mixed Waste Storage Facilities: Provided technical support to the EG&G Idaho interim status Hazardous Waste Storage Facility and the Mixed Waste Storage Facility.

- Idaho Chemical Processing Plant (ICPP) engineering experience:

  - Served as Group Supervisor of the Nuclear Fuels Custom Processing Group for 3 years performing dissolution of unirradiated, highly enriched fuels with plutonium contamination.
  - Performed technical support engineering for nuclear fuel dissolution and calcination facilities.
  - Served as a member of start-up task forces to start a nuclear hot cell decontamination facility (NWCF Decon Facility) and a graphite fuel burning and dissolution facility (ROVER).

- Senior Engineer at the Waste Isolation Pilot Plant (WIPP)

  - Cognizant engineer for the design of equipment for emplacement and retrieval of defense high level waste in the WIPP mine.
  - Operations engineer planning handling for both contract-handled and remote-handled transuranic waste in the surface and underground facilities.

EDUCATION: B.S., Mechanical Engineering, University of Utah

OTHER: Chairman, Advisory Committee for the Eastern Idaho Technical College
Hazardous Material Technician Training Program

NAME: Arthur B. Denison

AREA OF RESP: Experimental Activities

ASSOCIATION: EG&G Idaho, Inc.

EXPERIENCE: 28 years

- Unit Manager for Applied Physics/Analysis, EG&G Inc., Idaho Falls, ID
  - Technical and administration manager for Applied Physics Unit -- applied optics (lasers), condensed matter, electromagnetics, mathematical analysis.
- Westinghouse Idaho Nuclear Corp., Idaho Falls, ID
  - Technical liaison on Special Isotope Separation project (SIS) (process physics) between Lawrence Livermore National Laboratory and Westinghouse Idaho; aided in overall analysis of experimental tests.
- University of Wyoming, Laramie, WY.
  - Professor of Physics, research areas in electron paramagnetic resonance, ion-molecule interactions, nuclear and muon probes of matter, optically modified mass spectroscopy.
- Visitor and Research Participant at Los Alamos National Laboratory and European Universities and Laboratories.

EDUCATION: Ph.D., Physics, University of Colorado, Boulder, CO, 1963
B.A., Physics, University of California, Berkeley, CA, 1959

NAME: John R. Doggette

AREA OF RESP: Training and Certification

ASSOCIATION: Oak Ridge Associated Universities

EXPERIENCE: 25 years

- Associate Chairman, Training and Management Systems Division, ORAU
  - Manages 60 technical personnel and training staff who conduct human performance assessments and design, develop and deliver training for DOE, DOE contractors, NRC and other federal agencies.
- Principal Investigator, Manpower, Education, Research and Training Division, ORAU
  - Assessed training and performance requirements, established training programs, coordinated task groups of DOE contractor training personnel, analyzed personnel and training issues for DOE.
  - Established TRADE (Training Resources and Data Exchange), DOE contractor training peer organization. Assisted in managing Special Interest Groups and issue identification for workshops and national conferences.
- Program Manager, Fakahatchee Environmental Studies Center
  - Managed and instructed program for EPA to train water and wastewater technicians for municipalities.
- Assistant Professor and Instructor, Clemson University, Indiana University, Washburn University
  - Taught courses in educational administration, industrial and organizational sociology, and technical education.

EDUCATION:
Ed.D., Higher Education, Indiana University
M.S., Urban Affairs, University of Wisconsin
M.A., Urban History, University of Cincinnati
B.A., History, University of Cincinnati

NAME: David M. Drury

AREA OF RESP: OSHA 1B Specialist

ASSOCIATION: Private Consultant

EXPERIENCE: 7 years

- Private Consultant
  - Participant in Technical Safety Appraisal (TSA) Tiger Team Assessments
- Monterey Coal Company (MCC) (subsidiary of Exxon, USA)
  - Training Specialist: Coordinating and documenting training requirements, and individualized assessments for training.
  - Safety Specialist: Analyzed MCC accident statistics, maintained MSHA CFR 30 updates, maintained Illinois Right-to-Know law requirements, including MSDSs.
  - Health and Safety Technician: Maintained all health monitoring equipment, conducted air quality and noise sampling, fire protection audits, and self-rescuer audits.
- Safety Inspector: Loss control system, Computer Loss Control Surveillance System, MSHA inspections and worker safety audits; Emergency preparedness system.
- Exxon U.S.A.
  - Field Safety Coordinator: Valdez oil spill-conducted state and federal OSHA inspections of all facilities (barges, petroleum storage areas, vessels, food handling, etc.); worker safety and equipment audits.

EDUCATION: B.S., Industrial Technology, Southern Illinois University
Associates Degree, Mining Technology, Wabash Valley College

OTHER:
Ansul Industrial Fire School
National Safety Council Congress & Exposition
Mine Emergency Preparedness
Loss Control Management Training
Loss Control Surveillance System (data processing)
MSHA Instructor Certifications
MSHA Electrical Qualifications
Emergency Medical Technician (EMT-I)
OSHA 24 Hour Hazard Material Certification

NAME: Tobias E. Drury

AREA OF RESP: OSHA 1B Specialist

ASSOCIATION: Private Consultant

EXPERIENCE: 3 years

- Private Consultant
  - Participant in Technical Safety Appraisal (TSA) Tiger Team Assessments
- Prudential Financial Services
  - Financial Consultant: Creating individual financial plans and assessments through computerized analysis
- J.W. Gant and Associates
  - Financial Consultant/Stockbroker: Tracking individual stocks and mutual funds and making recommendations based on computerized analysis

EDUCATION: B.A., Finance with minors in Business Administration and Economics, Illinois State University

NAME: Leo G. Faust

AREA OF RESP: Radiological Protection

ASSOCIATION: Pacific Northwest Laboratory

EXPERIENCE: 32 years

- Pacific Northwest Laboratory
  - Various management positions covering all phases of health physics
  - Broad range of health physics and dosimetry research and development activities, including various dosimetry upgrade programs
  - Serves on several national and international standards committees, both as a participating member and as chairman of working groups
  - DOE representative to the Interagency Intrinsic Radiation (INRAD) Committee and Joint Radiation Protection Group
  - Participated in 18 Tiger Team/TSAs.
- General Electric Company at the Hanford Atomic Energy Project
  - Managed the radiation monitoring program of the Hanford Laboratories
  - Responsible for establishing improved routine surveillance programs resulting in better contamination control and reduced exposures within the facilities of the Laboratory
  - Development and application of radiological engineering criteria for new and old facilities; research and development of personnel dosimeters; dose rate determinations and shielding calculations

EDUCATION: Graduate studies in Physics and Nuclear Engineering
University of Washington Center for Graduate Study
B.S., Physics, Humboldt State College

OTHER: Fellow, Health Physics Society and American Nuclear Society
Authored and co-authored numerous technical publications and presentations
Active in committee work in Health Physics Society and American Nuclear Society

NAME: Darrell R. Fisher

AREA OF RESP: Radiological Protection

ASSOCIATION: Pacific Northwest Laboratory

EXPERIENCE: 13 years

- Pacific Northwest Laboratory
  - Technical Group Leader, Biokinetic and Dosimetric Modeling
  - Senior Research Scientist, involved in various aspects of health physics, including internal dosimetry, medical physics, bioassay, radiation biology, and uranium and plutonium toxicology.
  - Team member, safety appraisals at Savannah River Plant, Westinghouse Materials Company of Ohio, Paducah Gaseous Diffusion Plant, and Portsmouth Gaseous Diffusion Plant.
  - Consultant, several nuclear medicine and cancer treatment centers.
  - 75 publications, reports, and book chapters

EDUCATION: Ph.D., Nuclear Engineering Sciences, University of Florida
M.S., Nuclear Engineering Sciences, University of Florida
B.A., Biology, University of Utah

OTHER: Member, DOE Expert Group on Internal Dosimetry
Chairman, NCRP 46-10 on Assessment of Occupational Dose from Internal Emitters

NAME: Robert W. Gall

AREA OF RESP: Explosive Safety

ASSOCIATION: U.S. Department of Energy Field Office, San Francisco

EXPERIENCE: 25 years

- U.S. Department of Energy Field Office, San Francisco
  - DOE Facility Representative for the Lawrence Livermore National Laboratory High Explosive (B Division) test program for ES&H and operational issues. Developed the draft model DOE Facility oversight plan for LLNL. Participant in Tiger Team Assessments.
- U.S. Geological Survey, Menlo Park, CA
  - Environment, Safety and Health Manager of the eight state USGS Western Region. Formulated Environment, Safety and Health policy and long range plans for employee health programs, compliance with OSHA and EPA laws and regulations. Interacted with regulatory agencies to resolve policy issues.
- U.S. Veterans Administration, Palo Alto, CA
  - Program Manager, Occupational Safety, Health and Fire Protection program. Developed and implemented policy to comply with OSHA, NFPA and the Joint Commission on the Accreditation of Hospitals (JCAH) laws, regulations and standards.
- U.S. Veterans Administration, Washington, D.C.
  - Functioned as the Agency contact with the DOL, Federal Agency Programs Division. Interpreted Federal safety and health regulations for management and Field Facility Directors. Researched and answered congressional correspondence on safety, health and fire protection issues.

EDUCATION: B.S., Fire Science, University of Maryland

OTHER: Member, National Fire Protection Association
Past President, Association of Federal Safety and Health Professionals

NAME: Gary J. Gottfried

AREA OF RESP: Personnel Protection

ASSOCIATION: Apex Environmental, Inc.

EXPERIENCE: 16 years

- Apex Environmental, Inc.
  - Principal, Industrial Hygienist: Responsible for conducting industrial hygiene, public/occupational health and safety and environmental programs.
  - Manages and performs studies involving asbestos programs, indoor air quality, environmental audits, industry exposure assessment and control, hazard assessment and control, health and safety program development/implementation and industrial hygiene surveys; concentration in the petroleum industry, utilities, and laboratory environments.

- Biospherics Incorporated
  - Vice President (Latest Position) Laboratory and Industrial Hygiene Services: Responsible for operations of the industrial Hygiene and Laboratory Divisions, including management of financial performance, business development, protocol development, productivity, technical direction and supervision of over 100 industrial hygienists, chemists and environmental scientists.
  - Managed major industry and government contract efforts; performed technical programs as an industrial hygienist, and chemist; led and managed major hazard and environmental assessments, industrial hygiene surveys, laboratory studies, and health and safety programs; concentration in the petroleum industry, utilities, laboratories, and manufacturing facilities.

EDUCATION: B.S., Chemistry, Purdue University

OTHER: Certified Industrial Hygienist by the American Board of Industrial Hygiene, 1983
EPA Accredited Asbestos Inspector and Management Planner
President, AIHA, Potomac Section, 1985-1986
Vice President, AIHA, Potomac Section, 1984-1985
Treasurer, AIHA, Potomac Section, 1987-1989

NAME: Dolores A. Hagerty

AREA OF RESP: OSHA 1B Specialist

ASSOCIATION: Private Consultant

EXPERIENCE: 31 years

- Iowa Industries, Inc. (Subsidiary of Champion Spark Plug Company)
  - Secretary to Industrial Relations Manager
  - Industrial Relations Administrator: Responsible for all areas of industrial Relations, including Employment, Benefits, Wage & Salary Administration, Safety, First Aid, Worker's Compensation, Labor Relations, Affirmative Action, etc. Under direct supervision of Plant General Manager
- Legal Secretary

EDUCATION: Southeast Iowa Community College, General Business courses, Labor Management course; computer courses
Attended numerous seminars and training sessions relating to Safety, Worker's Compensation, OSHA, Pension Administration, First Aid training, Audiology Technician training

NAME: Winston H. Heneveld

AREA OF RESP: Operations

ASSOCIATION: Private Consultant

EXPERIENCE: 35 years

- Private Consultant
  - Nuclear operations consulting. Participant in Tiger Team Assessment (TTA) at LANL.
- Division of Reactor Licensing (DRL), Nuclear Regulatory Commission, Bethesda, MD
  - Generated, administered, and graded operator and senior operator reactor licensing exams for DRL. Both (commercial) power reactors and university research reactors were included in this activity.
- American Technical Publishers
  - Assisted in the preparation of a book, "Nuclear Power" for use by the IBEW union. "Nuclear Power" was published in July 1990.
- Engineering Manager, Rockwell Hanford, Richland, VA
  - Participated in the Basalt Waste Isolation Program (BWIP) for high level radioactive wastes.
- Engineer, Convair, Ft. Worth, TX
  - Participated in the Aircraft Nuclear Propulsion Program by conducting downwind diffusion studies from radioactive release field tests.
- Engineering Manager, Atomics International, Canoga Park, CA
  - Operated the compact reactor critical facilities for the Systems Nuclear Auxiliary Power (SNAP 10A) program to provide a compact power supply for space vehicles. Prepared Safety Analysis Reports, test procedures, and final reports for each experiment.

EDUCATION: M.S., Physics, Michigan State University
B.S., Physics, Math, Hope College

NAME: Jan E. Hill

AREA OF RESP: Coordinator

ASSOCIATION: EG&G Idaho, Inc.

EXPERIENCE: 13 years

- EG&G Idaho
  - Senior Administrator: Support and assist the Department of Energy in staffing Technical Safety Appraisal and Management teams. Maintain rosters of consultants and laboratory personnel in all technical disciplines.
  - Participated as Coordinator for the Technical Safety Appraisal Subteam on the Tiger Team Assessment at the Solar Energy Research Institute (SERI).
  - Participated as Coordinator for the Technical Safety Appraisal Subteam on the Tiger Team Assessment at the Paducah Gaseous diffusion Plant.
  - Administrator: Assisted in the planning and handled logistics for the teams onsite for the Technical Safety Appraisals conducted at the Advanced Test Reactor. Acted as liaison between EG&G Idaho, Inc. management and team members during onsite appraisal.
  - Coordinated responses for the Facility Action Plan. Designed and maintained a computerized system for tracking corrective action. Maintained hard copy files and produced regular status reports.
  - Senior Administrative Specialist: Performed full secretarial duties in support of the Advanced Test Reactor.

EDUCATION: Numerous work-related workshops, computer courses, and general management skills courses

NAME: Hugo R. Hofmann

AREA OF RESP: Aviation Safety

ASSOCIATION: HRH Aero Consulting, Inc.

EXPERIENCE: 45 years

- HRH Aero Consulting, Inc., Front Royal, VA
  - President. Provide consultation services for aviation safety and management, aviation systems, air carrier maintenance and airworthiness and preparation of manuals and recording systems.
- Federal Aviation Administration
  - Safety/Advisor responsible for determining adequacy of maintenance programs of major U.S. air carriers, evaluation of training programs and determination of compliance with applicable federal regulations.
- Eastern Airlines, Miami, Fla.
  - Instructor, ground school responsible apprentice, maintenance personnel and flight engineer recurrent and new equipment training

EDUCATION: B.S., Industrial Training, University of Miami

OTHER: Member, Multiple Aviation Safety Appraisals at DOE

NAME: William G. Jacobs

AREA OF RESP: Maintenance

ASSOCIATION: Reynolds Electrical and Engineering Co., Inc.

EXPERIENCE: 30 years

- Manager, Site Maintenance Department, Reynolds Electrical and Engineering Co., Inc., Nevada Test Site (NTS)
  - Various administrative, line and management positions covering all phases of maintenance
  - Formulated procedures and established policies for efficient and economical maintenance controls.
  - Personally responsible for the development of the Real Property Maintenance Management Program at the NTS (DOE order 4330.4).
  - Chairman of committee for the 1988 DOE Maintenance Management Conference, Las Vegas, Nevada.
  - Presentation at previous DOE Maintenance Management conferences.
  - Member of Technical Safety Appraisal Team, Savannah River Laboratory
- Hughes Aircraft Corporation, Inglewood, California
  - Electrical/Mechanical inspections of Fire Control Systems

EDUCATION: Sierra High School, Gardena, California
El Camino Junior College
Harbor Junior College, Major: Business Administration and Accounting
Numerous Plant Engineering and Maintenance Workshops

OTHER: American Water Well Association

NAME: Philip G. Kelley

AREA OF RESP: Explosives Safety

ASSOCIATION: Mason & Hanger-Silas Mason Company, Inc.

EXPERIENCE: 40 years

- Pantex Plant, Amarillo, TX
  - Technical Advisor: Developed and implemented programs for explosives safety, OSHA compliance, and transportation of hazardous material.
  - Safety Director: Manager of department responsible for Industrial, Occupational, Explosives, and Nuclear Weapons Safety Programs; Member of DOE Explosives Safety Committee which is responsible for development and publication of explosives safety standards for use throughout the DOE complex.
  - Senior Safety Engineer: Supervised the implementation of explosives safety quantity-distance standards at a DOE weapons production facility, conducted appraisal of production facility for compliance with DOE explosives safety standards, and prepared requests for exemptions and waivers to DOE explosives safety standards.
- U.S. Army (Colonel, Retired)
  - Chairman, DoD Explosives Safety Board: Responsible for developing explosives safety standards for the manufacture, storage, and transportation of ammunition and explosives throughout the DoD complex; conducted appraisals of the explosives safety programs of DoD Components.
  - Various command, operations, and staff positions involving the storage, security, use, and disposal of both conventional and nuclear ammunition and explosives.

EDUCATION: M.S., Public Administration, Southern Illinois University
B.S., Management, University of Maryland
U.S. Army Command and General Staff College
Industrial College of the Armed Forces

NAME: Bernard R. Kokenge

AREA OF RESP: Organization and Administration

ASSOCIATION: BRK Associates, Inc.

EXPERIENCE: 25 years

- Private Consultant
  - TSA/Tiger Team Member on 13 DOE Headquarters, DOE, Appraisals
  - Member of the Secretary of Energy's Tritium Task Group
  - Chairman, Sandia National Laboratory, Livermore Safety Oversight Committee
- Vice President, Kentucky Christian College
  - Strategic Planning and Program Development
- Monsanto Research Corporation, Mound Plant
  - Associate Director Mound: Responsible for all of Mound's component development and production activities associated with primary detonators, timers, actuators and pyrotechnic devices.
  - Nuclear Operations Director: Responsible for all radiological development and production technology as applied to the isotopes of hydrogen, analytical chemistry support for Mound, and production/testing of radioisotopic thermoelectric generators for the Galileo and Ulysses space missions.
  - Nuclear Technology Manager: Responsible for diverse technical radiological functions including plutonium-238 processing technology, plutonium waste management development, tritium process development in support of DOE's weapons programs, and processing/engineering technology for Mound's tritium operations.
  - Plutonium Processing Manager: Responsible for the Plutonium Processing Building operation, wherein plutonium-238 fuel forms were produced and plutonium-238 scrap recovered.
  - Plutonium Fuels Group Leader: Investigated the behavior and physical properties of plutonium-238 as a fuel for space applications.

EDUCATION: Ph.D., Inorganic Chemistry, Ohio University
B.S., Chemistry, University of Dayton

OTHER: Patent on Plutonium-238 isotopic fuels
DOE Management Team Chairman for the Galileo and Ulysses RTG space mission program
Member, American Chemical Society
Member, Kentucky Academy of Services

NAME: Oliver D. T. Lynch, Jr.

AREA OF RESP: EH Senior Manager

ASSOCIATION: U.S. Department of Energy, Office of Performance Assessment

EXPERIENCE: 26 years

- U.S. Department of Energy, Germantown, MD
  - Director, Safety Inspections Division, OSA
- U.S. Nuclear Regulatory Commission, Rockville, MD
  - Radiation Measurements and Health Effects Section Chief
  - Standardization and Decommissioning Section Chief
  - Safeguards and Non-Power Reactors Section Chief
  - Radiation Protection Section Leader
  - Senior Operating Reactor Project Manager
  - Environmental Assessment Section Chief, TMI Program Office
  - TMI Special Inquiry Group (Rogovin)
  - Senior Environmental Project Manager
- International Atomic Energy Agency
  - Technical Working Group Leader, Vienna, Austria
  - Instructor, Cairo, Egypt
- General Dynamics, Electric Boat Division, Groton, CT
  - Chief, Radiological Control Health Engineering
- U.S. Atomic Energy Commission, Las Vegas, NV
  - Radiological Specialist
- San Diego State University, San Diego, CA
  - Assistant Radiological Safety Officer

EDUCATION: M.S., Nuclear Physics, San Diego State University
B.S., Applied Physics, San Diego State University

OTHER: Member, Health Physics Society
Member, American Forestry Association
Sigma Pi Sigma
Author, Textbooks and Training Manuals, Small Craft Safety, Operations, and Navigation

NAME: Charles W. McKnight

AREA OF RESP: Fire Protection

ASSOCIATION: Westinghouse Idaho Nuclear Company

EXPERIENCE: 10 years

- Westinghouse Idaho Nuclear Company
  - Project Manager, Fire Protection Upgrade Projects: Responsible for coordinating all phases of a project to upgrade existing and install new fire protection equipment.
  - Senior Fire Protection Engineer: Conducted plant inspections for fire protection; developed preventive maintenance program for fire protection systems; provided fire protection and safety design input; and design new and test existing fire protection systems.
  - Participated in the Tiger Team Evaluation of LLNL.
- Factory Mutual Engineering, Bellevue, Washington
  - Loss Prevention Consultant: conducted field inspection and analysis of various industries throughout the Pacific Northwest and Western Canada for protection against fire, flood, collapse, and earthquake.
- HKM Associate Engineering, Billings, Montana
  - Assistant Engineer: Conducted dam safety studies; developed computer program for continuous center pivot irrigation; and designed drainage intercept system.

EDUCATION: B.S., Agriculture Engineering, Montana State University

OTHER: Member, National Fire Protection Association
Registered Fire Protection Engineer, State of Montana

NAME: Robert M. Osborn

AREA OF RESP: Worker Safety and Health (OSHA) Compliance

ASSOCIATION: Westinghouse Hanford Company

EXPERIENCE: 12 years

- Westinghouse Hanford Company
  - Senior Industrial Safety Engineer, Waste Tank Safety Assurance: Plan and perform OSHA compliance inspections, audits and appraisals. Provide first point of contact for DOE Tiger Team TSAs. Initiated an intensive machine guarding program to bring Hanford facilities into OSHA/ANSI compliance.
- United Nuclear Industries
  - Supervisor, Quality Audits: Implemented and maintained QA Audit Program for operating and maintenance activities. Performed audits to determine compliance with specified quality, safety, and environmental requirements.
- Puget Sound Naval Shipyard
  - Boilermaker: Held lead position for retubing and repair of shipboard boilers. Served as Test Director for hydrostatic testing of boilers and pressure vessels.

EDUCATION:
Occupational Safety and Health, OSHA Training Institute
National Fire Protection Association, NFPA 101 Life Safety Code
DOE, Mort/A1
QTRC, Effectiveness Performance-Based Verification
Practice and Process of Auditing, Rockwell International
Quality Assurance Management, Columbia Basin College

NAME: Robert L. Peterson

AREA OF RESP: Auxiliary Systems

ASSOCIATION: Private Consultant

EXPERIENCE: 31 years

- Private Consultant
  - Team member, Technical Safety Appraisal at Sandia National Laboratory and Idaho National Engineering Laboratory.
- General Electric Company
  - Manager, Operational Surety
  - Manager, Compliance Programs
  - Manager, Quality Control and Consulting
  - Manager, Quality Control Operations
  - Manager, Producibility Engineering
  - Manager, Quality Assurance
  - Manager, Process Control Engineering

EDUCATION: B.S., Industrial Engineering, University of Florida, Gainesville, Florida
Graduate, General Electric 3-Year Management Training Program.

OTHER: Professional Engineers License
Certified Quality Engineer
Certified General Contractor
Senior Member, American Society for Quality Control

NAME: Reuben P. Prichard

AREA OF RESP: Aviation Safety

ASSOCIATION: RPX, Incorporated

EXPERIENCE: 45 years

- RPX, Incorporated, McLean, VA
  - President: Provides consultation services for aerospace safety and management, aviation systems, operations, systems and engineering analysis, explosives, hazardous materials, transportation and packaging, training and motivational programs
- Flight Assurance Corporation, Washington, DC
  - Senior Vice President: Provided consultation services on management and safety of aviation systems, policy, and independent overviews
- Department of Energy, Washington, DC
  - Director, Safety Engineering & Analysis Division: Responsibilities for environment safety and health assurance, safety analysis and review system, aviation, nuclear energy, quality assurance, transportation, training, and operational safety
- National Aeronautics and Space Administration, Washington, DC
  - Director of Safety and Environmental Health and Assistant Director of Safety for Aviation and Chief, Flight Crew Operations: Responsible for astronaut training and readiness; planning, management, and overview of some aspects of Mercury, Gemini, Apollo, Skylab, Space Shuttle Programs; NASA prototype research aircraft; and for overall NASA safety and environmental health policy and overview
- United States Navy
  - Naval Aviator and Test Pilot
  - Director, U.S. Naval Test Pilot School, Naval Air Test Center

EDUCATION: M.S., Flight Performance Stability and Control, Princeton University
B.S.A.E., U.S. Naval Postgraduate School
B.S., U.S. Naval Academy

NAME: Reuben P. Prichard (Continued)

OTHER:
DOE Distinguished Career Service Award for Safety Contributions
Team Leader and Member, numerous Comprehensive ES&H and Aviation Safety Appraisals at NASA and DOE Field Installations
Member, AIAA, ISASI, System Safety Society, Helicopter Association International, Soaring Society of America, Society of Experimental Test Pilots
FAA Commercial Pilot and Flight Instructor - Airplanes, Instrument Helicopters, Gliders
Professional Engineer, Engineering, Safety

NAME: Howard E. Rew, Jr.

AREA OF RESP: Quality Verification

ASSOCIATION: Westinghouse Hanford Company

EXPERIENCE: 15 years

- U.S. Department of Energy, Germantown, MD
  - On loan from Westinghouse Hanford Company to the Office of Performance Assessment (EH-32) to assist in the planning, performing, and reporting of Quality Verification Inspections, Technical Safety Appraisals, and Tiger Team Assessments.
- Westinghouse Hanford Company
  - Quality assurance program development and implementation; corrective action program management and administration; nuclear reactor inservice inspection program development and implementation; technical specification surveillance and administration; and system performance measurement and reliability analysis.
- Bechtel Power, Inc. (Washington Public Power Supply System Unit #2)
  - Nuclear construction quality assurance administration, engineering, auditing, and document review; and quality assurance liaison between Bechtel, the Supply System, and the A/E.

EDUCATION: B.S., Mathematics (Numerical Analysis), Brigham Young University

OTHER: Certified Quality Engineer (ASQC)
Certified Accident Investigator (DOE)
Member, ASME/NQA Committee Working Group on Maintenance

NAME: Carol L. Vega

AREA OF RESP: Personnel Protection

ASSOCIATION: MSE, Inc.

EXPERIENCE: 8 years

- MSE Inc.
  - Director ESH&Q Policy and Oversight Office: Responsible for developing MSE policy and requirement that incorporate all applicable DOE Orders and Federal/state regulations; conducting all independent environmental, safety, health, and QA-related audits; and coordinating the MSE Self-Assessment Program.
  - Environmental, Safety, and Health Engineer: Conduct surveys and inspections of facilities, equipment, and work practices; evaluate potential environment, safety, and health hazards; investigate accidents and designs; and conduct audits of ES&H program elements as part of DOE Technical Safety Appraisal.
  - Provide professional expertise to Idaho National Engineering Laboratory teams that audited USDA facilities in the Northern Plains.
- U.S. Department of Energy
  - Industrial Hygienist: Initiated comprehensive program to provide sitewide training for scientific professionals
- Cyprus Industrial Materials
  - Industrial Hygienist. Conducted safety and health inspections of underground and open pit mines; conducted various industrial hygiene surveys to evaluate potential hazards

EDUCATION: M.S., Industrial Hygiene, Montana College of Mineral Science and Technology
B.S., Occupational, Safety and Health, Montana College of Mineral Science and Technology
B.S., Business Administration, Montana College of Mineral Science and Technology

OTHER: Adjunct Professor, Montana College of Mineral Science and Technology

NAME: Larry D. Warren

AREA OF RESP: Technical Editor (Lead)

ASSOCIATION: Private Consultant

EXPERIENCE: 26 years

- Private Consultant
  - Technical and management consulting related to nuclear weapons research and development, nuclear weapons manufacturing facilities operations, and nuclear facilities safety programs. Participant in Technical Safety Appraisals (TSAs), Tiger Team Assessments (TTAs), and management appraisals/reviews.
- U.S. Department of Energy, Germantown, MD
  - Safety Programs Manager, Office of Weapons Safety and Operations, Military Application, Defense Programs: Formulated safety and health policy and long-range plans for three national laboratories and five manufacturing facilities in the nuclear weapons complex. TSA coordinator/contact and Program Representative.
- Wilmington District, U.S. Army Corps of Engineers, Wilmington, NC
  - Deputy Commander: Managed/directed annual planning/execution of $60-70 million in civil works projects and $9-15 million in military construction projects; Contracting Officer for construction and service contracts.
- Los Alamos National Laboratory
  - Program Manager, Insertible Nuclear Component Technology Program and Corps Support Weapons System Concept Study; Design Engineer, Nuclear weapon components/subsystems.
- U.S. Army (Lieutenant Colonel, Retired)
  - Various command, operations, and training assignments; and nuclear weapons research and development staff assignments.

EDUCATION: M.S., Nuclear Engineering, North Carolina State University
B.S., Nuclear Engineering, North Carolina State University
U.S. Army Command and General Staff College

NAME: Tommie S. Wright

AREA OF RESP: Worker Safety and Health (OSHA) Compliance

ASSOCIATION: Pacific Northwest Laboratory

EXPERIENCE: 13 years

- Pacific Northwest Laboratory
  - Senior Development Engineer - OSH Management Systems. Conduct and develop OSH training for DOE sites.
- Urie Environmental - Safety Engineer
  - Conducted Hazardous Waste Worker Training per 1910.120. Functioned as Safety Officer at trenching operation at Rocky Mountain Arsenal. Conducted confined space inspections at DOE sites.
- Pacific Northwest Laboratory - Engineer Laboratory Safety
  - Functioned as ALARA coordinator, licensing administrator for private radioactive materials license, counseled pregnant radiation workers, produced dosimetry report, served as backup supervisor for Radiation Protection Technologists.

EDUCATION: B.S., Health Physics, Oklahoma State University

OTHER:
Certified, National Registry of Radiation Protection Technologists
DOE Accident Investigation Course
Management Oversight Risk Tree Course
OSHA - Construction Safety Course
Supervisors Orientation to Occupational Safety in DOE (Instructor)

NAME: J. David Yesso

AREA OF RESP: Technical Support

ASSOCIATION: Halliburton NUS Environmental Corporation

EXPERIENCE: 19 years

- Halliburton NUS Environmental Corporation
  - Environmental Subteam Technical Coordinator on four Tiger Team Assessments.
  - Technical coordinator and radiation specialist for the assessment of environmental conditions at the Rocky Flats Plant as part of the DOE Special Assignment Environmental Team, and for environmental surveys at seven DOE facilities.
  - Managed project for the development of environmental performance objectives and criteria for DOE.
  - Provides environmental and radiological consulting support to industrial and governmental organizations.
  - Former Director of NUS Chemistry Training Center.
  - Radiation Safety Officer and Radiochemistry Manager for the Laboratory Services Group.
  - Provided consulting services in chemistry and radiochemistry to nuclear utilities.
- Battelle, Columbus Laboratories
  - Group Leader for radiochemistry
  - Managed nuclear facility's radiological laboratory
  - Project Manager for program to characterize wastes
  - Technical consultant on program to calibrate and redesign utility radiation monitoring system
  - Project Manager or technical lead on research projects related to various aspects of the nuclear fuel cycle
  - Technical support for decontamination and decommissioning projects.
- University of Pittsburgh, Department of Physics and Chemistry
  - Developed rapid radiochemical separation procedures
  - Conducted research on the mechanisms of neutron damage to metals
  - Research on interactions of heavy ions with matter
  - Responsible for design and development of accelerator ion sources

EDUCATION: Ph.D., Nuclear Chemistry, University of Pittsburgh
B.S., Chemistry, University of Pittsburgh

Appendix A-4

Biographical Sketches of Management Subteam Members

NAME: Ralph Throckmorton

AREA OF RESP: Management and Organization Subteam Leader

ASSOCIATION: U.S. Department of Energy Field Office, Idaho

EXPERIENCE: 20 years

- U.S. Department of Energy
  - Assistant Chief Counsel to the Idaho Field Office. Responsible for legal counsel in all field office activities and recently assigned responsibility for technology transfer management.
  - Counsel to the Chicago Field Office. Responsible for legal counsel in laboratory management, program management, acquisition and financial assistance.
- United States Air Force
  - Staff Judge Advocate, Chief Procurement Law Division for the Air Force Contracts Management Division.
  - Staff Judge Advocate for the Air Force Armament Development and Test Center.

EDUCATION: LL.M., George Washington University
J.D., University of Iowa
B.BA., University of Iowa

NAME: Mayhue A. Bell

AREA OF RESP: Management Subteam

ASSOCIATION: Oak Ridge Associated Universities, Inc.

EXPERIENCE: 30 years

- Management Consultant
  - Management, Operations and Technical Safety Appraisals
- U.S. Department of Energy, Washington, D.C.
  - Managed the DOE Independent Safety Assessment Program for Nuclear Reactors, Fusion, and Space Power System Safety, and Emergency Preparedness: Developed policy and safety requirements; planned, coordinated, performed and led over 150 management and technical safety appraisals.
- Carolinas Virginia Nuclear Power Associates, Inc.
  - General Manager: Responsible to sponsoring power companies (Duke, CP&L, SCE&G, and Virginia Electric). Served on the Board of Directors.
  - Operating Director: Responsible to the general manager for company operations, including technical support, health, experiments, research programs, training and certification, emergency preparedness, and plant operations through the Plant Superintendent.
- Nuclear Regulatory Commission
  - Reactor Inspection Specialist: Responsible for performing inspections of licensed facilities during construction, plant testing, and operation.
- Dupont, Savannah River Plant, Aiken, South Carolina
  - Senior Supervisor, Plant Operations: Shift Supervisor, Reactor Operations, and Nuclear Engineer.

EDUCATION: B.S., Nuclear Engineering, N.C. State University, with Honors
Diploma, Nuclear Power Reactor Safety, Harwell, England
Diploma, Quality Assurance Nuclear Power Industry, NRC
Diploma, Federal Executive Institute, University of Virginia

OTHER: U.S. Representative of IAEA - Served on panel of experts and as editor, preparing manual on emergency preparedness, and on IAEA team responsible for training representatives from all Spanish speaking nations on emergency preparedness.

NAME: Steven G. Casto

AREA OF RESP: Management Team

ASSOCIATION: U.S. Department of Energy

EXPERIENCE: 15 years

- U.S. Department of Energy - Oak Ridge Field Office/Evaluation and Control Division
  - Stationed at the Portsmouth Enrichment Office in Piketon, Ohio. Conducts special management reviews for Contracting Officers Representatives at the Portsmouth Enrichment Office and the Fernald Environmental Management Project Office in Fernald, Ohio.
  - Oversees Internal Audit Department of major GOCO contractors at the above mentioned locations.
  - Leader or participates on the following DOE teams: Contractors Procurement System Review teams, Nuclear Material Control and Accountability Survey teams, Cost and Schedule Control Systems Criteria Surveillance review teams, and ES&H Tiger Team reviews.
- Department of Health, Education, and Welfare - Office of Inspector General - Audit Agency
  - Conducted financial, programmatic and operational audits on colleges/universities, State and local government programs.
  - Participated as an expert accounting witness in special Federal and State Grand Jury Investigations into Medicaid Fraud. This effort included a special task force comprised of the FBI, HEW-Office of Investigations investigators and auditors.

EDUCATION: M.B.A., Central Michigan University
B.S., Business Administration, Majoring in Accounting, Youngstown State University

MILITARY EXPERIENCE: U.S. Army 1966 - 1969
Served in South Vietnam, 11/1967 - 12/1968

NAME: Ray D. Duncan

AREA OF RESP: Management and Organization

ASSOCIATION: Private Consultant

EXPERIENCE: 39 years

- Private Consultant
  - Chaired Task Group to examine management systems and project management controls at the Savannah River Field Office.
  - Conducted analysis of existing business management systems at the Nevada Field Office.
  - Chaired Task Force of nationally recognized experts to examine SAIC's quality assurance program in support of the High-Level Waste Storage Program at the Nevada Test Site.
  - Chaired a Task Force to develop and document a detailed operational plan for hosting U.S.S.R. scientists at the Nevada Test Site.
- U. S. Department of Energy, Energy Research and Development Administration, Atomic Energy Commission
  - Deputy Manager, Nevada Operations Office, responsible for directing high technology research and development programs with annual budget in excess of $650 million and an organization of more than 9,000 employees.
  - Assistant Manager for Administration, Nevada Operations Office, responsible for directing eight major Divisions including Contracts, Procurement, Financial Management, Auditing, Electronic Data Processing (EDP), Property Management, Industrial Relations, Personnel, Communications, and Safeguards and Security.
  - Director of EDP and Administrative Services Division, Nevada Operations Office, responsible for all scientific and computer systems and direction of internal administrative functions.

EDUCATION: Masters level course work at Graduate School of Public Administration, University of Washington

OTHER: Distinguished Career Service Award
Meritorious Executive Award

NAME: Yvonne M. Garbe

AREA OF RESP: Assistant Management Subteam Leader

ASSOCIATION: U.S. Department of Energy, Office of Special Projects

EXPERIENCE: 19 years

- U.S. Department of Energy, Office of Environment, Safety and Health (EH)
  - EH Coordinator or Environmental Assistant for Tiger Teams conducted at Feed Materials Production Center, Fernald, Ohio; Pantex Plant, Amarillo, Texas; Portsmouth Gaseous Diffusion Plant, Piketon, Ohio; Lawrence Livermore National Laboratory, Pleasanton, California; Hanford Site, Richland, Washington; Argonne National Laboratory, Argonne, Illinois; Sandia National Laboratories, Albuquerque, New Mexico; and the Solar Energy Research Institute, Golden, Colorado.
  - Environmental Compliance Coordinator between DOE-HQ and the San Francisco Operations Office and field operations for purposes of environmental compliance and oversight with regard to applicable Federal, state and local environmental regulations.
- U.S. Environmental Protection Agency
  - Office of Solid Waste, Project Manager of programs established to identify and characterize hazardous waste and constitutents for potential listings under RCRA. Specialized in industrial manufacturing wastes, mixed wastes and synfuels.
- Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio
  - Waste Management Office, responsible for management of nonradioactive waste.

EDUCATION: M.S., Environmental Engineering, University of Cincinnati
B.S., Biology, Wayne State University

NAME: Charles E. Gilmore

AREA OF RESP: Management and Organization

ASSOCIATION: U.S. Department of Energy Field Office, Idaho

EXPERIENCE: 28 years

- U.S. Department of Energy
  - For the past year, has provided management for two special detail assignments for the Idaho Field Office manager. The first was the organization and staffing of a new Technical Support Division to provide ES&H support to all INEL programs. The second assignment was to establish the INEL Action Plan Task Force to prepare the action plan in response to the INEL Tiger Team.
  - From August 1988 to October 1990, served as Director, Office of External Affairs, Idaho Operations Office. In this position, managed the INEL Public Affairs, Congressional and Intergovernmental Affairs, Information Management, University Programs, Technology Transfer, and Exploratory Research and Development programs. Prior to this assignment, served a six-month assignment with the Idaho Department of Commerce to assist with a variety of economic development projects.
  - From 1977 to 1988, served as Director, Advanced Technology Division. In that position, managed programs in hydroelectric and geothermal energy, fusion safety research, materials and metallurgical research, electric vehicle development and testing, physics and chemical science research, biotechnology research, and basic engineering science research.
  - Joined the Atomic Energy Commission in 1970 filling several positions managing reactor safety projects at the Idaho and Bethesda, Maryland offices.
- Phillips Petroleum Company
  - From 1963 to 1970, worked for Phillips Petroleum Co., at the National Reactor Testing Station on a variety of nuclear reactor safety programs. Co-authored many water reactor safety program plans for programs such as LOFT and PBF.

EDUCATION: M.S., Nuclear Engineering, University of Oklahoma in 1963
B.S., Engineering Physics, University of Oklahoma in 1962
Completed 20 hours toward an MBA, Idaho State University

NAME: Roger W. Griebe

AREA OF RESP: Management Subteam

ASSOCIATION: Organizational Analysis Corporation

EXPERIENCE: 27 years

- Organizational Analysis Corporation
  - Senior Partner; providing management consulting to the electrical utility industry and the Federal Government.
- Aisling Incorporated
  - President, provided management and technical consulting to commercial, utility, and governmental organizations.
- Energy Incorporated
  - Senior Vice President; provided technical services and certain high-tech computer/electronic components to industry.
- Idaho National Engineering Laboratory
  - Project Manager; provided technical project management and specialized services to the U.S. Department of Energy, Energy Research and Development Administration, Nuclear Regulatory Commission, and U.S. Atomic Energy Commission.

EDUCATION:
Senior Executive Program, Stanford University, 1983
Ph.D., Purdue University, 1968
M.S.M.E., Purdue University, 1966
B.S.M.E., Purdue University, 1964

OTHER:
Registered Professional Engineer, Idaho #4123
Adjunct Professor, University of Idaho Extension, Idaho Falls, 1968-1975
Listed in: Who's Who in the West, Who's Who in the World
Member, Sigma Xi
Member, American Nuclear Society
Member, American Society of Mechanical Engineers

NAME: Lydia Guerra

AREA OF RESP: Report Coordinator, Management Subteam

ASSOCIATION: M.H. Chew and Associates, Inc.

EXPERIENCE: 12 years

- M.H. Chew and Associates, Inc.
  - Report Coordinator for the Management Team Report of the Tiger Team Assessment at the Idaho National Engineering Laboratory (INEL).
  - Report Coordinator for the Safety and Health Subteam reports of the Tiger Team Assessment at the Pittsburgh Energy Technology Center, Lawrence Berkeley Laboratory and the Princeton Plasma Physics Laboratory.
- Westinghouse Idaho Nuclear Company, Inc.
  - Report Coordinator for the Safety and Health Subteam Reports of the Tiger Team Assessments at the Savannah River Site, Pinellas Plant, and Brookhaven National Laboratory.
  - Report Coordinator for the Technical Safety Appraisal Reports at the Oak Ridge National Laboratory, Strategic Petroleum Reserve Site, Y-12 Plant TSA Followup.
  - Westinghouse Idaho Nuclear Company, Inc. Coordinator for the Technical Safety Appraisal of the Idaho Chemical Processing Plant at INEL.
  - Manager, Information Processing Services, responsible for the management direction and operation of two centralized Information Processing Centers.

EDUCATION: B.S., Corporate Training, Idaho State University

OTHER: Certified Instructional Trainer, Corporate Training
Word Processing Instructor, Eastern Idaho Technical College

NAME: Lisa Herrera

AREA OF RESP: Management and Organization

ASSOCIATION: U.S. Department of Energy, DP-636 (NE-53 rotation)

EXPERIENCE: 2 years

- U.S. Department of Energy
  - Defense Program Career Intern Program. Provide support to senior program engineer responsible for the technical cognizance over the operation of the reactor, fuel and target fabrication facilities and production R&D on the Savannah River Plant (SRP).
  - Participated in the Operational Readiness Evaluation for HB-Line, Savannah River Site, in the area of Operational Safety Requirements and Technical Standards.
- ID-E, White Sands Missile Range, DOD
  - Responsible for Global Positioning System (GPS) for data acquisition using Motorola Eagle GPS Receivers and Software in GW-Basic as a navigation system via satellite messages sent to the receivers.
- NIST, U.S. Department of Commerce
  - Develop Turbo C programming code for calibration vibrations sensors (accelerometers) on the standard vibration generators at NIST as primary vibration standards. Data analysis techniques, using Pascal, C, and Lotus 123, in vibration measurement by reciprocity and optical interferometers.
- USAISC, White Sands Missle Range, DOD
  - Perform operational checks on hand held radios and chargers, troubleshooting radios by means of circuit diagrams, log in trouble call.

EDUCATION: B.S., Electrical Engineering (minor in Mathematics), New Mexico State University, December 1989

NAME: Richard B. Loop

AREA OF RESP: Management Subteam

ASSOCIATION: U.S. Department of Energy Field Office, Idaho

EXPERIENCE: 20 years

- U.S. Department of Energy Field Office, Idaho
  - Program Manager, Advanced Technology Branch, for DOE, other Federal agency, and "work for others' sponsored research programs conducted at the Idaho National Engineering Laboratory and various Universities.
- EG&G Idaho, Inc.
  - Senior Engineer, Materials Scientist, and Program Manager for internally funded research programs.
- Westinghouse Electric Corp., Idaho (NRF)
  - Nuclear Plant Engineer; conducted training in plant operations for Naval Officers at the Navy's Naval Reactor Facility.

EDUCATION: M.S., Mtls. Science & Engineering, University of California, Berkeley, 1971
B.S., Mtls. Science, San Jose State College, 1969

OTHER: Member, The Metallurgical Society, American Institute of Mining, Metallurgical, and Petroleum Engineers

NAME: Robert F. McCallum

AREA OF RESP: Management and Organization

ASSOCIATION: Private Consultant

EXPERIENCE: 14 years

- Private Consultant
  - Provides environmental, management, and planning consulting services in energy, energy technology, and waste management.
- Packer Engineering, Inc.
  - Responsible for coordinating development of technical and cost proposals to government and industrial clients addressing a broad range of engineering and scientific disciplines. Served on the ETEC, METC, and SERI Tiger Team Assessments as the Report Technical Manager. Served on the PETC Tiger Team as a member of the Management Subteam.
- Battelle Memorial Institute
  - Responsible for coordinating site selection, institutional, and regulatory compliance support to DOE as part of basic technology development associated with DOE's geologic repository and interim waste storage programs.
  - Coordinated preparation of environmental data reports and decision methodology document in support of DOE's Crystalline Repository Program for disposal of high-level nuclear waste. Participated in numerous public and state briefings during program.
  - Coordinated development of responses to public comments on multidisciplinary Environmental Impact Statement for Management of Commercially Generated Radioactive Waste.
  - Assisted in development of site selection methodology for identification of potential host locations for disposal of low-level radioactive waste in Illinois.

EDUCATION: M.S., Management, Purdue University
B.S., Civil Engineering, University of Lowell

OTHER: Received Engineer-In-Training Certificate, Massachusetts, 1976

NAME: Marvin P. Norin

AREA OF RESP: Management

ASSOCIATION: Private Consultant

EXPERIENCE: 38 years

- Private Consultant
  - Management and technical services. Safety appraisals, readiness reviews and quality assurance inspections of DOE facilities.
- Science Applications International Corporation
  - Senior Scientist. Technical support services to DOE programs.
- U.S. Department of Energy
  - Director, Office of Regulatory Development, Nuclear Energy programs. DOE policy development on regulatory aspects of licensed nuclear power plants.
  - Deputy Director, Division of Safety, Quality Assurance and Safeguards. Evaluation of nuclear safety, quality assurance in Nuclear Energy programs.
  - Chief, Quality Assurance, Standards and Operational Safety Branch.
  - Systems Engineer, FFTF project.
- Martin Marietta, Nuclear Division
  - Technical Director, SNAP 19 power system development.
  - Supervisor, Reactor Heat Transfer and Fluid Mechanics Laboratories.
- Franklin Institute Laboratories
  - Senior Research Engineer. Nuclear reactor heat transfer and fluid mechanics.
  - Research Engineer. Analysis of electro-hydraulic power drives.
- Pennsylvania State University, Engineering Experiment Station
  - Research Assistant. Internal combustion engines.

EDUCATION: B.S., Mechanical Engineering, Pennsylvania State University
M.S., Mechanical Engineering, Pennsylvania State University

OTHER: American Society of Mechanical Engineers
Nuclear Standards Board, American National Standards Institute
Interagency Nuclear Safety Review Panel, 1980-1985
Executive Standards Council, American National Standards Institute, 1982-1988

NAME: Donald K. Parker

AREA OF RESP: Planning and Corporate Interface

ASSOCIATION: Private Consultant

EXPERIENCE: 40+ years

- Private Consultant

  - General and financial management participation in Department of Energy Tiger Teams. Evaluation of financial management practices related to construction activities at DOE Savannah River Site. Financial management systems and practices evaluation for Raytheon Services Nevada, prime A-E contractor for DOE at the Nevada Test Site and prime Management and Operating contractor for DOE at Johnston Atoll and other Pacific locations.

- U.S. Department of Energy - Nevada Field Office

  - Director, Financial Management Division, 15 years
  - Chief Accountant, 8 years
  - Various other accounting positions, 4 years

- Zia Company, Los Alamos, NM

  - Various accounting and accounting supervisory positions, 9 years

EDUCATION: B.S., Business Administration, University of Colorado
Various post graduate financial management and accounting courses, University of Nevada, Las Vegas

APPENDIX B

ENVIRONMENTAL SUBTEAM ASSESSMENT PLAN

Environmental Assessment Plan for the DOE Tiger Team Assessment at the Los Alamos National Laboratory

September 1991

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1.0 Introduction

On June 27, 1989, Secretary of Energy James D. Watkins announced a ten-point initiative to strengthen environmental protection and waste management activities in the U.S. Department of Energy (DOE). One of the initiatives involves conducting Tiger Team Assessments at DOE's operating facilities.

The purpose of the Environmental Assessment portion of the Tiger Team Assessment at the Los Alamos National Laboratory (LANL) is to provide the Secretary with information on the current environmental regulatory compliance status and associated vulnerabilities of the facility, root causes for noncompliances, adequacy of DOE and site contractor environmental management programs, and response actions to address the identified problem areas.

The scope of the LANL Environmental Assessment is comprehensive, covering all environmental media and applicable Federal, state, and local regulations, requirements, and best management practices (BMPs). The environmental disciplines to be addressed include air, soil/sediment/biota, surface water, groundwater, waste management, toxic and chemical materials, radiation, quality assurance, inactive waste sites and releases, and National Environmental Policy Act (NEPA) requirements.

2.0 Environmental Assessment Information

The LANL Environmental Assessment will be conducted by a team of technical specialists, managed by an Environmental Subteam Leader and Assistant Subteam leaders from the DOE Office of Environmental Audit (OEV) and the DOE Nevada Field Office. The technical specialists are from other DOE Offices, Arthur D. Little, Inc., and Halliburton/NUS Corporation. The names and responsibilities of the team members are listed in Table 2-1.

2.1 Pre-Assessment Activities

Pre-Assessment activities for the LANL Environmental Assessment included the issuance of an information request memorandum, a Pre-Assessment Site Visit, and an initial review of documentation which was sent to the Environmental Team by LANL in response to the information request memorandum.

A Pre-Assessment Site Visit was conducted on August 27-29 by the Tiger Team Leader, the three Subteam Leaders for Environment, Health and Safety and Management; the Assistant Subteam Leaders for Environment; the Arthur D. Little Group Coordinator and a Waste Management Specialist for the Environmental Subteam: and representatives from the Office of Special Projects and other DOE Offices. The purpose of the Pre-Assessment visit was to become familiar with the site, to review information being supplied and request additional information and to coordinate plans for the upcoming assessment with the DOE Albuquerque Field Office (DOE AL), Los Alamos Area Office (LAAO), and LANL. Union representatives and representatives from the New Mexico Environmental Division, and Santa Clara, Sari Ildefonso, and San Juan Indian Tribes presented their concerns about environment, safety, and health (ES&H) issues at LANL.

2.2 On-Site Activities and Reports

The on-site activities for the Environmental Assessment will take place between September 23, 1991 and November 8, 1991. On-site activities include field investigations, file/record reviews, and interviews with site personnel. The detailed agenda for the Environmental Subteam Technical Specialists is shown in the Appendix. Daily modifications to the agenda will be coordinated with the site environmental contacts from LANL once the Assessment begins..

A close-out briefing will be conducted at the conclusion of the Tiger Team Assessment. A draft report containing the findings will be provided to DOE AL, LAAO, LANL and interested regulators and Indian Tribes for their review and comment.

Table 2-1: LANL Environmental Subteam Roster

Name	Specialty Areas	Affiliation
Donna A. Bergman	Team Leader	DOE-HQ
Andrea J. Heintzelman	Asst. Team Leader	DOE-HQ
Paul Dickman	Asst. Team Leader	DOE-NV
William G. Rhodes	Group Coordinator	ADL-CAM
Victoria Potter Ford	Deputy Group Coordinator	ADL-CAM
Mark O. Heuberger	IWS/GW	ADL-CAM
Paul E. Feuerbach	IWS	ADL-CAM
Thomas L. Collins	WM	Consultant
Clifford H. Summers	WM	ADL-CAM
Richard M. D'Ermilio	WM	ADL-CAM
G. Stewart Young	TCM	ADL-CAM
Charlotte B. Banzer	TCM	Consultant
Tommy Eckle	Air	Halliburton/NUS
Paul H. Jones, Jr.	Radiation	ADL-CAM
David J. Allard	Radiation	ADL-CAM
Michael J. Lees	Radiation	ADL-CHS
Hilton E. Rivera	QA/QC	ADL-CAM
James W. Melloni, Jr.	QA/QC	ADL-CAM
Paul J. Pifalo	QA/QC	ADL-CAM
James J. Rea	Groundwater	ADL-CAM
Roger W. Voeller	Water	ADL-CAM
Joanne P. Fichera	Water	ADL-CAM
John J. Pullium III	NEPA Subteam Leader	DOE-HQ
Stephen L. Simpson	NEPA-Asst. Subteam Ldr.	DOE-HQ
Gerald K. Eddleman	NEPA	ORNL
William E. Schramm	NEPA	ORNL
Carl C. Trettin	NEPA	ORNL
Mary B. Peters	NEPA	LAI
Bruce Kemp	NEPA	ASI

3.0 Air

The air-related portion of the environmental assessment at LANL will include activities that emit or have a potential to emit one or more air-contaminating materials, the emission controls or administrative procedures applied to restrict those emissions, the in-stack monitoring systems, and ambient air surveillance monitoring equipment and procedures. The assessment will address those air contaminants for which air quality standards (criteria pollutants) or emission standards (new source performance standards or national emission standards for hazardous air pollutants [NESHAP]) have been established by the United States Environmental Protection Agency or by state or local agencies. Sources emitting air toxics as defined in New Mexico regulations will be included in the Assessment.

Emissions to the atmosphere of organics through process vents and equipment leaks from hazardous waste TSDF that require permits under Subtitle C of RCRA will be assessed. Programs to minimize emissions to the atmosphere of pollutants from hazardous waste treatment, storage, and disposal facilities will be assessed.

Programs for compliance with NESHAP requirements for asbestos will be assessed by team toxic and chemical materials specialists, and radionuclide dose assessments and meteorology will be addressed by team radiation specialists. Close liaison will be maintained with these team specialists because of the importance of air-related issues.

3.1 Issue Identification

The general approach to identification of issues related to the air portion of the assessment will include the following information-gathering activities: 1) Review of documentation, including policy statements, program plans, existing air-operating permits and permit applications, standard operating procedures, and previous audits and assessments; 2) A review of the ambient-air surveillance monitoring program; 3) An examination of a sampling of facilities and sources of air-contaminant emissions and any devices or techniques used to measure and control emissions to evaluate compliance with regulations, permits, and the DOE ALARA process; and 4) Interviews with DOE and site contractor personnel.

Areas of particular interest will include sources emitting criteria pollutants (e.g., particulates, sulfur dioxide, nitrogen oxides, volatile organic compounds, carbon monoxide, and lead), regulated hazardous air pollutants (e.g., radionuclides and beryllium), and pollutants regulated by the New Mexico Environmental Division as toxic air pollutants.

Programs to deal with nonradiological pollutants will be reviewed to assess their adequacy to identify, control and quantify emission sources and emissions, and to evaluate their effect on ambient-air quality. Emission control and emission measurement programs are of concern at facilities in several LANL technical areas. Observation of facilities and interviews with operating personnel will be conducted at TA-3 (power plant, asphalt concrete plant, lead pouring facility, beryllium shops, etc., see daily agenda), TA-16 (solvent reclamation, incinerators, steam plant, burning areas, and service station), TA-35 (air filter building, sodium and sodium testing buildings, and target fabrication), TA-21 (paint shop, electronics building, furnace building, high-temperature chemistry, and steam plant), TA-50

(size reduction, exhaust stack, and incinerator), and TA-54 (drum crusher and Area G landfill). The use of a single ambient air quality monitoring station for the site is also of concern.

The uses of organic and halogenated solvents will be assessed as potential or actual sources of emissions to determine if they are adequately characterized, monitored, and controlled.

Programs related to RCRA requirements described in 40 CFR 264, Subparts L(Waste Piles), M(Land Treatment), N(Landfills), O(Incinerators), X(Miscellaneous Units), AA(Organic Emissions from Process Vents), and BB (Organic Emissions from Equipment Leaks) will be assessed to determine their adequacy in controlling or minimizing pollutant emissions to the atmosphere.

A review or programs to identify, control, and monitor air effluent streams that are contaminated with radionuclides will be conducted. Efforts expended to meet the requirements of 40 CFR 61, Subpart H, dated December 15, 1989, will be evaluated to determine the level of compliance achieved. A sampling of radionuclide sources will be observed to evaluate the emission controls and effluent monitoring that are being conducted. Efficiency testing of emission control devices will also be evaluated. Some of the sources of concern are LAMPF at TA-53, several sources at TA-3, tritium sources at TA-33 and TA-41, and plutonium operations at TA-55.

3.2 Records Required

Additional files will be reviewed as part of the assessment including documents not yet reviewed or received (e.g., classified documents, individual files, documents not yet identified). Documents and files to be reviewed as part of the assessment include, but will not be limited to, the following:

- Inventory of emission sources and quantification of emissions (criteria pollutants,, NESHAP pollutants, air toxics);
- Air permits and corresponding permit applications;
- Air effluent monitoring/sampling and QA procedures;
- Ambient air surveillance monitoring (rad and nonrad) and QA procedures;
- Stack test results;
- Correspondence with regulatory agencies relative to air issues;
- Reports on accidental releases of air contaminants; and
- Notices of violation for air sources.

4.0 Surface Water

The surface water portion of the Environmental Assessment of LANL will encompass all activities that may cause liquid releases to the environment, as well as controls or administrative procedures designed to minimize or eliminate the potential for such releases. The Assessment will address domestic wastewaters and their disposal via local sanitary wastewater collection and treatment systems, wastewaters from maintenance and service operations, design and maintenance of stormwater collection and control ditches, interceptors and outfalls. LANL's methods for preventing possible cross-connections between potable and nonpotable water distribution systems will be reviewed as part of the drinking water portion of the Assessment. The Spill Prevention Control and Countermeasure Plan (SPCC), oil storage facilities and relevant records will be reviewed.

Emphasis will be placed also on compliance with federal, state and local water pollution control requirements established in conformance with the NPDES permit, the Clean Water Act (CWA) and with drinking water rules promulgated as part of the Safe Drinking Water Act (SDWA) requirements.

In addition, LANL will be evaluated to determine whether requirements expressed in DOE Orders and Secretary of Energy Notices (SEN) are being addressed in an appropriate manner. The Assessment will also evaluate water pollution control practices with respect to industry-accepted best management practices (BMPs).

4.1 Issue Identification

Issues to be assessed have tentatively been identified to include compliance with: existing NPDES permit requirements; DOE Orders; Clean Water Act; Safe Drinking Water Act; New Mexico Water Quality Control Commission (NMWQCC) and Environmental Improvement Division (NMED) regulations; and a Federal Facilities Compliance Agreement (FFCA) among DOE, NMED, and EPA Region VI. Problems with NPDES compliance have been identified previously at LANL through state, EPA, and DOE inspections and surveys and have regularly been identified by LANL in Discharge Monitoring Reports. The adequacy and progress of NPDES compliance corrections will be assessed with special interest in compliance with the terms and schedules included in the FFCA or items identified in NMED compliance inspections.
Previous surveys have identified contaminated soils and groundwater contamination in the vicinity of some wastewater or storm water outfalls with a significant potential for downstream surface water contamination during heavy precipitation and/or snowmelt. LANL programs to identify and eliminate potential pathways for off-site contamination or contamination of other media from surface water discharges will be evaluated for adequacy and progress.

Off-site or other media contamination which may have occurred will be investigated, including:

- Spills or leaks of pollutants into permeable soils.

- Releases to sanitary sewers, laboratory wastewater sewers and/or storm drains without retention, chemical and radiological analysis, or treatment.

- Undetected leaks of concentrated liquid wastes to the sanitary or laboratory sewer systems, or to storm drainage systems leading into the many canyons of LANL.

Liquid waste treatment, collection and handling equipment will be examined and records of operation will be reviewed, including the sanitary wastewater treatment processes (especially the large one in TA-3) and the industrial wastewater treatment process in TA-50-1. The Assessment will include identification of potential discharges to surface waters, or to the on-site sanitary systems that may not be addressed in operating permits or other documents from LANL. The site will be investigated for evidence of possible breaks or obstructions in the sewer systems which could result in releases of wastewater to the environment. Copies of standard operating procedures (SOPs), Operation and Maintenance Manuals for wastewater treatment processes (O&M manuals), operating logbooks and maintenance records will be reviewed. Field practices will be observed to determine how closely SOPs are being followed. Interviews with managers and operators of monitoring equipment and treatment systems will be conducted in order to understand modifications or significant deviations, if any, from written SOPs. LANL operates many septic systems (regulated by the state under the Underground Injection Control Program), most of which are in less heavily developed technical areas. The process for upgrading wastewater treatment systems (design, treatment works approval and construction) will be reviewed. Septic systems will be evaluated for operation, impact on wastewater treatment facilities and disposal and treatment of septage. Septic system evaluations will be coordinated with the groundwater specialists. Due to the nature of the contaminants, the evaluation of the industrial wastewater treatment plant at TA-50-1 will be coordinated with the radiation specialists.

Treatment and disposal of sludge produced during wastewater treatment processes (sanitary and industrial) will be evaluated for compliance with permits and federal requirements, and for the potential to contaminate surface waters or groundwaters. As appropriate, sludge disposal evaluations will be coordinated with groundwater specialists.

Additional sources of surface water discharges have been identified to include non-contact cooling water, cooling tower blowdown and boiler blowdown. Selected sources will be reviewed for programmatic control over source contamination and maintenance of water treatment systems to ensure that permit limitations are met.

DOE Orders require accurate wastewater characterization and generation studies to determine sources of wastewaters, confirm appropriate discharge conveyance tie-ins and identify contaminant sources for elimination or minimization. The LANL program will be evaluated for completeness and progress.

The Assessment will also take special interest in programs at LANL to prevent, correct or control cross connections between the potable water system and potential sources of contamination, particularly water systems associated with sanitary wastewater, process wastewater or process water systems (including recycle/reuse water systems.) Where cross-

connections are unavoidable and backflow prevention is used as a control measure, LANL's programs for installation, inspection and maintenance will be evaluated. LANL's self monitoring reports (required under SDWA) will be reviewed as well as operating records and permits related to the groundwater and surface water supplies.

Selected technical areas will be investigated to observe normal routines, including maintenance and laboratory activities that generate wastewaters. Various discharge and monitoring points will be reviewed, and actual sampling and analytical procedures will be observed. Emphasis will be placed on the major contributors to wastewater generation, including the water and wastewater treatment plants; boiler houses, non-contact cooling waters and cooling tower blowdowns; stormwater runoff locations; and hazardous waste treatment , storage and disposal processes for potential surface water impacts.

Laboratory "down the drain" policies and practices will be reviewed for impact on wastewater treatment system operation and discharge permit compliance.

Past water and wastewater conveyance, treatment and disposal systems will also be evaluated to determine what environmental problems may exist as a result of past practices. Site surface drainage features, including channels, swales, culverts and catch basins will also be reviewed. Storage of materials outdoors may affect storm water will be reviewed for management practices.

LANL's Spill Prevention Countermeasure and Control plan will be evaluated for compliance with EPA requirements and for accuracy in coverage of the LANL actual risks.

4.2 Records Required

Files will be reviewed as part of the assessment, including documents not yet reviewed or received (e.g., individual files, documents not yet identified). Specific documents and files to be examined as part of the review process include, but are not limited to, the following:

- Recent analytical data on wastewater releases to receiving streams.
- Notices of violations related to wastewater releases.
- Operators logbooks and treatment plant reports.
- Standard operating procedures for wastewater collection, holding and treatment.
- Sampling protocols and logbooks.
- Wastewater lab tracking reports.
- Treatment plant and monitoring equipment maintenance records.
- Detailed drawings of the domestic water supply, storage and distribution system.
- Records of drinking water quality.
- SPCC plan.
- Progress report on wastewater treatment facility improvements.
- NMED inspection reports.
- FFCA progress reports
- Internal memos or correspondence relating to surface water or drinking water problems.
- Memos and correspondence relating to infiltration of rainwater or groundwater into sanitary or laboratory sewers and exfiltration of wastewaters into soil or groundwater during dry seasons. This information includes flow monitoring and precipitation.
- Information on sludge characteristics and sludge disposal techniques.
- LANL surface water environmental surveillance programs.
- LANL storm water programs, including best management practices (BMPs) to minimize potential storm water contamination.

- NPDES permits and applications for renewal/modification.
- Programs to identify potential changes in wastewater characteristics due to facility or process modifications.
- Other records as determined on site.

5.0 Groundwater/Soil/Biota

The purpose of the groundwater portion of the Environmental Assessment at LANL is to evaluate the programmatic and technical status of groundwater protection and monitoring as they relate to applicable regulations, DOE Orders, and industry and best management practices (BMPs). This effort will be coordinated with the data obtained from the waste management, inactive waste sites, surface water and radiation specialists. Applicable regulations include DOE Orders, New Mexico Environmental Department (NMED), Groundwater Environmental Improvement Division regulations and requirements and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Guidance documents include publications developed as part of the CERCLA and the Resource Conservation and Recovery Act (RCRA) programs by the U.S. EPA and documents published by professional groundwater societies such as the National Water Well Association.

5.1 Issue Identification

Groundwater Protection Management Program Plan (GPMPP), Environmental Monitoring Program Plans, and recent copies of environmental monitoring reports will be reviewed to determine if they are in compliance with DOE requirements. The reports will also be reviewed for technical accuracy and data validity.

Observation of sample collection and handling procedures and the review of written sampling protocols will be performed to evaluate data quality. The sampling frequency and sample locations will be evaluated to determine if they provide an adequate database for identification of groundwater quality and quantity.

Key issues relative to groundwater monitoring programs were identified from preliminary review of information provided by DOE. These issues will be investigated through reports, written records, and documents, direct observation of field operations, and interviews with key technical and management personnel. Applicable regulatory agencies will also be contacted if needed.
Analytical chemistry from samples obtained from the groundwater and soil borings in the immediate vicinity of the waste disposal operations at Technical Area (TA-54) and Areas G and L will be examined to determine the extent of vertical and horizontal contamination anomalies. Activities at TA-54 and Areas G and L include the storage of low level radioactive waste and chemical waste, respectively. Area G waste disposal practices have utilized shafts, trenches and pits for disposal of asbestos, beryllium residue, empty pesticide containers PCB-contaminated solids, in addition to low-level radioactive waste. Area L was utilized as the primary chemical waste disposal unit until 1985. Thirty-four chemical waste disposal shafts at Area L have been sealed. Previous studies conducted by LANL have indicated vapor phase transport of organic contaminants at depths in excess of 100 feet. Liquid residues were disposed of in unlined shafts and represent potential impacts to soils and perched groundwater.

The drinking water aquifer supplies the three well fields and the Gallery (e.g. Guaja Well Field, Los Alamos Well Field, Pajarito Well Field and Water Canyon Gallery), which are

utilized for potable water sources. Well permits, well construction logs and the associated analytical chemistry data will be examined to ensure that regulatory provisions were met. The impacts of historical and/or current liquid discharges on the shallow, perched groundwater located in the alluvial deposits found in the Frijoles, Pajarito, Los Alamos, Ancho and Mortandad Canyons will be assessed. The sediment and biota portion of the Assessment will examine downgradient alluvial sediment in the Canyons for evidence of consistent sampling, as well as the determination of whether sediments have been impacted by contamination. There is documented sediment contamination in several Canyons.

Additional areas are of concern in this portion of the Assessment. Several Technical Areas are located off the main site property, these areas should be integrated into the Groundwater Protection Management Program Plan. Areas of interest include off-site locations such as TA-57, Fenton Hill and TA-47, an abandoned laboratory in Santa Fe. On-site locations, such as the disposal well located at TA-54, Area G and the unlined oxidation lagoon located at TA-53, are also of concern for they will be required by NMED to obtain Groundwater Discharge Permits. Visual investigations of the canyon area outfall locations will be conducted to identify seeps and springs which could be potentially contaminated from upgradient releases at the Technical Areas. Monitoring wells will be evaluated for structural integrity, vandalism and/or tampering which might have resulted in releases to the groundwater.

The status of current investigations and plans for future corrective actions will be evaluated. In addition to document review, the groundwater specialists will observe field conditions, monitoring well locations and construction, well purging and sampling techniques and field QA/QC procedures. Discussions will be held with site personnel who have responsibilities for groundwater protection, remedial action, and monitoring well sampling.

5.2 Records Required

The following documents will be needed to evaluate the status of the groundwater programs:

- Groundwater Protection Program Management Program Plan, Environmental Protection Program Implementation Plan, Environmental Monitoring Plans (past and present) and Annual Site Environmental Reports, all of which are required under DOE Order 5400.1.

- LANL reports of subsurface soils or groundwater investigations, monitoring programs, or remedial action;

- Data and maps which contain information on subsurface geology, hydrology and potential or known areas of contamination;

- Field Operations Plans for conducting past or present subsurface soils investigations;
- A Health and Safety Plan, including special precautions required when constructing or sampling groundwater monitoring wells; and

- Sampling data and recordkeeping documents.

6.0 Waste Management

The waste management portion of the Assessment will address solid, hazardous, classified, and mixed waste. The assessment will be carried out by reviewing and evaluating all activities generating wastes and the treatment, storage, recycling and disposal practices involved in the handling of the waste including handling of wastes by commercial off-site facilities.

The review will cover the management of all waste streams from "cradle to grave," and will generally track facility processes that potentially generate wastes, the actual generation of wastes, and the final disposal, treatment and storage of wastes. The Assessment will include facility operations and processes which potentially generate waste; waste identification and characterization; and waste accumulation, storage, treatment, recycling, transportation, and disposal.

The method of review will involve various interrelated activities: (1) Review of waste management plans, files (pertaining to waste), hazardous waste manifests, inspection records, training records, monitoring records, permits, correspondence with agencies, and any other documents or records related to waste management issues; (2) Interviews with people involved in waste management as well as with people involved with day-to-day waste activities; and (3) Site tours and investigations of all waste facilities, waste accumulation areas, satellite accumulation areas, and any other areas where waste is present or potentially present, in particular, the active solid waste management units on site.

The Assessment of waste management issues will look at the programs for compliance with all federal, state, and local laws and regulations. New Mexico essentially adopts federal Resource Conservation Recovery Act (RCRA) regulations, but does have specific requirements for "special wastes" such as asbestos. Equally important will be compliance with applicable DOE Orders, including 5400.1, 5400.2A, 5400.3, 5480.19, 5820.2A, 5400.5, and 6430.1A, as well as other applicable orders and SOPs.

Additionally, areas containing PCB wastes, asbestos wastes, air emissions from wastes, and discharge of wastes into waterways will be addressed in coordination with the applicable specialists.

Mixed waste, containing both radioactive and hazardous components, is regulated by the Atomic Energy Act (AEA) and RCRA, and thus presents a complex problem from management and compliance perspectives. Therefore, generation and management of mixed waste will receive special emphasis.

The assessment will also include the evaluation of all underground storage tanks (USTs), including all plans and procedures in place to ensure compliance with local, state, and federal regulations, and DOE guidelines and operating procedures.

6.1 Issue Identification

Issues of particular concern will include:

- Waste generation, characterization, accumulation, and storage:
  - Technical areas (TAs)
  - TA-3 (maintenance shops)
  - TA-46 (isotope separation area)
  - TA-16 (high explosive formulation and synthesis)
  - Paint shop
  - Plating processes
  - Electronics facilities
  - Photographic centers
  - Miscellaneous wastes generated in other technical areas;
- Waste residue (i.e., ash) from open burning at TAs-14, 15, 16, 36, and 39;
- Compliance with Part B permit for a TSD facility;
- Issues relating to Part A and Part B applications for mixed wastes permitting;
- LANL facility which handles treatment and storage of wastes (TA-50);
- Waste generated by contractors, including the Los Alamos airport;
- Underground storage tank upgrading and monitoring as well as potential leaking;
- Waste generation and management at the geothermal site;
- Hazardous waste training program, including training, documentation, and verification;
- General recordkeeping documentation relating to waste, including hazardous waste manifests, inspection logs, and periodic waste generation reports;
- Waste characterization regarding "classified" items (which may not yet be considered waste), and mixed wastes;
- Site-wide transportation of wastes from the points of generation to temporary storage and to final storage treatment of disposal; and
- Implementation of the waste minimization program.
- Wastes currently stored in lagoons at TA-53. These will be investigated in conjunction with the radiation, surface water, and groundwater specialists.

6.2 Additional Records Required

Files will be reviewed as part of the Assessment, including documents not yet reviewed or received (e.g., classified documents, individual files, documents not yet identified). Specific documents and files to be examined as part of the review process include, but will not be limited to, the following:

- Procedures for hazardous waste generation, accumulation, and on- and off-site transport;
- Hazardous waste manifests;
- Manifest exception reports;
- Documents relating to hazardous waste contractors doing business with LANL;
- The notice of violation mentioned in the pre-assessment visit;
- Training records;
- Materials management and inventory documentation;
- Current copies of the RCRA Part B, and both the Part A and Part B applications for a mixed waste TSD permit;
- Inspection records;
- Any correspondence with U.S. EPA and/or state agencies; and
- Documentation of waste handling procedures at the Los Alamos airport and at the geothermal site.

7.0 Toxic and Chemical Materials

The toxic and chemical materials portion of the Environmental Assessment at LANL will include a review of all activities, facilities, technical areas, and documentation regarding the management and use of toxic and chemical materials. Emphases will be placed on the handling, storage, and disposal of these materials. The information obtained will be used to determine whether the management and control of TCM at LANL are in compliance with federal, state and local regulations, and pertinent DOE orders. In addition, the application of best management practices (BMPs) will be evaluated. Interviews with appropriate site personnel, review of documentation (including policies and procedures) and applicable records, and site investigations will also constitute important elements of the TCM portion of the Assessment.

Primary emphasis will be given to toxic and chemical materials regulated by the Toxic Substances Control Act (TSCA), the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), and the National Emission Standards for Hazardous Air Pollutants (NESHAPS). Primary chemicals to be considered include, but are not limited to polychlorinated biphenyls (PCBs), asbestos, and pesticides. In addition, this portion of the assessment will evaluate compliance with Title III of the Superfund Amendments and Reauthorization Act (SARA).

7.1 Issue Identification

LANL documents indicate that there is extensive use of PCBs in the LANL electrical system, specifically in transformers and capacitors. An initial assessment conducted by LANL in 1985 indicated there were 41 PCB transformers (i.e. containing greater than 500 ppm PCBs) and 3,626 PCB capacitors. In addition, 144 PCB-contaminated transformers (i.e. containing 50-500 ppm PCBs) were identified. In 1987, a more extensive inventory conducted by LANL identified a total of 133 PCB transformers in operation, 110 PCB-contaminated transformers in use, and 2,796 PCB capacitors in service. Seventy-six PCB transformers are located indoors and 57 outside. Most of the 100 PCB - contaminated transformers and capacitors are also located indoors. As of 1985, 49% of the PCB transformers were calculated to be 20 years old or more.

The current inventory of PCB and PCB-contaminated electrical equipment will be reviewed for completeness. The condition of the equipment will be inspected for potential leakage and spill control systems. Areas of particular concern to the presence of PCB transformers or capacitors investigations will be Technical Areas (TA) TA-2,TA- 3, TA-16, TA-21, TA-35, TA-53, and TA-55. TA-3, TA-21, and TA-53 were identified in the 1988 Environmental Survey as having the greatest number of PCB transformers. Two PCB transformers in TA-2 were identified as a particular concern due to their location and the potential for PCB fluid to drain into the Los Alamos Canyon stream. Eight PCB transformers in TA-3 were identified as being indoors near high traffic areas and/or drains. Leaking transformers were initially identified in the 1988 Environmental Survey in TA-16, TA-35, and TA-53.

Inspection records and procedures will be reviewed to identify management practices regarding past spills, leaks, reporting requirements, and clean-up practices. Marking or

labeling of PCBs and PCB items will also be reviewed for compliance with marking requirements and label formats.

LANL documents indicate that LANL inspected its hydraulic systems in 1986 to determine if any oils were PCB-contaminated (i.e. containing greater than 50 ppm PCBs but less than 500 ppm). Equipment with levels greater than 50 ppm was reported to be drained, flushed and re-filled with non-PCB oil, and re-tested. Procedures for the PCB analyses, removal, handling, and disposal from the hydraulic equipment will be reviewed.

LANL is a generator of PCB waste, with on-site storage and disposal facilities. The management of all PCB storage and disposal operations will be reviewed. Disposal practices will be reviewed for current and past inventories of all PCB fluids and equipment to determine the method of disposal and location of disposal sites. Additionally, record keeping and reporting requirements for PCB storage and disposal facilities, including those records required for PCB incinerator and landfill operations, will be reviewed. These will include the annual records and written annual document logs. LANL records indicate that PCB waste also utilizes off-site disposal. Hence, applicable PCB waste disposal records, reports, and manifests for off-site PCB disposal will be reviewed in coordination with the waste management specialist. The PCB landfill at TA-54 Area G will be inspected. The toxic and chemical materials specialist will confer with the waste management specialist on PCB waste management issues and PCB disposal sites.

A review of LANL documents indicates that asbestos was widely used during original facility construction. Asbestos was also present in construction materials and products developed at LANL and was used for insulation materials in heating/cooling systems, ceiling tiles, paneling, and roofing materials.

An inventory program to survey all locations where asbestos is used was begun by LANL in 1986. The Health, Safety, and Environmental Division was directing the program with Pan Am staff collecting samples, recording asbestos type, and labeling ACM areas. Removal or repair of asbestos is coordinated and supervised by the Health, Safety and Environmental Division. Areas identified in the DOE 1988 Environmental Survey which can potentially contribute to environmental concerns included inactive buildings (e.g. TA-16) where asbestos was observed on the floor and near open doorways of abandoned buildings and deteriorating asbestos insulation on exterior steam lines.

The LANL asbestos control program will be evaluated in terms of past and pending asbestos abatement projects, removal and disposal projects, and any demolition of buildings or facilities containing asbestos materials.

Procedures to remove, store, and dispose of any contaminated soil, water, and equipment will be reviewed. Evaluation of procedures for monitoring asbestos, recordkeeping, labeling practices, and storage will be conducted. The Toxic and Chemical Materials specialists will confer with the air and waste management specialists for NESHAPs compliance and waste disposal issues, respectively.

Pesticide/herbicide usage at LANL is conducted by commercial applicators certified by New Mexico and by servicemen/operators who work under the supervision of the certified

applicators. Johnson Control World Services, Inc. administers the pesticide operation. Contractor processes and procedures will be reviewed to verify that specifications are established for mixing, treatment, and safe application procedures. Records of the amounts applied, personnel involved, and dates of application will be reviewed. The assessment will also focus on storage practices of pesticides at TA-60, Building 29, and disposal practices of unused pesticides and/or empty containers.

LANL documents indicate that a computer inventory was developed to identify use and storage of toxic and chemical materials at individual operating divisions. Procedures for purchasing and maintaining the inventory, and for tracking and locating toxic and chemical materials on-site will be reviewed. LANL documents indicate there are two principal chemical distribution centers on-site which account for most of the chemicals used and distributed at LANL. These are a chemical warehouse managed and operated by Van Waters and Rogers, and a second chemical warehouse storage facility operated by Johnson Controls. The storage and distribution practices of these operations will also be reviewed.

Fuels and chemicals stored in bulk (e.g., drums and compressed gas cylinders) will be examined for issues such as management and storage procedures. Of particular interest will be outdoor drum storage practices in TA-3, TA-9, TA-15, TA-16, TA-18, TA-21, TA-33, TA-35, and TA-46. TA-35 and TA-46 were identified in the 1988 Environmental Survey report as having the greatest number of drums observed to be stored adjacent to drainage ditches. These two TA areas and the other areas listed above were also identified as having the greatest number of drums observed to be stored directly on the ground surface and/or without spill containment.

LANL documents indicate that Above Ground Storage Tanks (ASTs) are used extensively for storage of raw materials, products, and radioactive and hazardous wastes. Those ASTs for raw materials and product storage will be evaluated. The SPCC Plan associated with these ASTs will be reviewed. The tanks will be investigated and evaluated for issues such as inventory control, labeling, containment, compatibility requirements for materials stored, and segregation of tanks storing incompatible materials. The tank observations will also focus on volume, age, and leak detection capabilities. Inspection reports, spill control, and clean-up procedures for past and/or potential leaks will also be reviewed. Occurence reporting for spills will be evaluated for compliance with the requirements of SARA Title III. Other issues related to SARA Title III include completeness of the inventory of hazardous materials, identification of releases, reporting, and roles and responsibilities of contractors.

7.2 Records Required

Files will be reviewed as part of the Assessment, including documents not yet reviewed, received, or identified. Specified documents to be reviewed include, but will not be limited to, the following:

- Procedures for handling, transport, control, and management of toxic substances

- Toxic substance labeling and tracking system, current inventory lists
- Records of audits or inspections (internal or external) relating to the toxic substances program
- PCB management, storage, spill prevention, and disposal procedures
- PCB annual inventory documents (1985-1990)
- Inventory of current PCB-contaminated equipment, or documentation of their removal
- Records of PCB transformer inspections and leak/spill cleanup records (1985-1990)
- Correspondence with the fire department on PCB equipment
- Asbestos handling, removal, and disposal procedures, and environmental monitoring
- Location of buildings containing asbestos, including usage, and records of asbestos use in process equipment and support facilities
- Pesticide training, handling, and storage procedures, disposal records, and environmental monitoring
- SOPs for pesticides
- Relevant pesticides reports to regulatory agencies
- Procedures for the handling, storage, use, and disposal of chlorofluorocarbons and chlorinated solvents
- Spill control and emergency preparedness plans for ASTs
- Inspection and maintenance records for ASTs (1985-1990)
- Other records as determined on-site

SARA Title III documentation including:

- Spill notification documents
- Hazardous/extremely hazardous chemical inventories
- Emergency planning notification documents
- Tier I/II Form submittals

- Form R Submittals

8.0 Radiation

The radiation portion of the Environmental Assessment at LANL will include reviewing all activities, facilities and areas that involve or potentially involve radiation or radioactive material. Environmental radiation protection programs at LANL will be assessed to determine compliance with the documents listed in the Tiger Team Guidance Manual, applicable federal and state regulations and Department of Energy (DOE) Orders. These programs will also be reviewed against commonly accepted best industry practices and standards of performance.

The Assessment will consist of evaluating environmental radiation protection programs in the following six areas: environmental surveillance, effluent releases, radioactive waste management, radiological analyses, decontamination and decommissioning and inactive waste sites. Radiation issues cut across all media and areas to be evaluated during the Assessment, hence, the radiation specialists will coordinate their reviews with the other team specialists to ensure all radiation related issues are reviewed in appropriate detail.

8.1 Issue Identification

The approach used in conducting the Assessment will consist of interviews with LANL employees, contract personnel and DOE personnel (including LAAO and DOE-AL personnel); inspections of selected LANL Technical Areas (TAs), facilities and operational processes; and review of documents, procedures and records. Program areas will be evaluated by reviewing their defined scope, design bases, data quality and the effectiveness of program implementation. Facility design, safety analysis, engineered safety features and monitoring and control devices will be evaluated as they pertain to the environmental release of radioactive materials.

The radiological environmental surveillance program assessment will include evaluating the pathways monitored, their associated sampling locations and the bases for selection. Potential issues have been identified in the following areas: types of media, numbers of samples and types of analysis; ambient air monitoring (on- and off-site) used in performing dose assessments; plutonium, uranium and tritium soil contamination from weapons testing; and solid and liquid radioactive waste treatment, storage and disposal facilities.

Monitoring equipment and its maintenance and calibration requirements will be reviewed. Analytical requirements will be reviewed including lower limits of detection, warning levels and action levels. Analytical techniques, collection methods and sampling frequency will be evaluated for the following media, as appropriate: air; surface water; groundwater; storm drain water; sewerage; milk; soil; sediment; sludge; vegetation; direct radiation; and wildlife.

Off-site dose assessment methodologies, for maximum exposed individual and population dose calculations, will be reviewed and evaluated including sample locations, sample media, data validity, calculation methods and analysis documentation. The methods used for data review and preparation of the radiological portion of the Annual Site Environmental Report will be reviewed.

Review of the radioactive effluent monitoring program will include both liquid and gaseous effluents. Potential issues have been identified in the following areas: liquid and gaseous effluent monitors and sampling; soil column discharges; NESHAPS compliance; liquid waste and stormwater discharges; and application of as low as reasonably achievable (ALARA). Areas of concern are the liquid waste plant (TA-50-1) and LAMPF (TA-53). The radiation specialists will coordinate these reviews with the surface water, groundwater and air specialists. The gaseous effluent review will include the following: release points monitored and the bases for selection; monitor design, calibration and maintenance; and ALARA techniques utilized. The liquid effluent review will include the following: control and monitoring of continuous and batch releases, including intermittent surface run-off; equipment design, maintenance and calibration; and ALARA. Analytical requirements will be reviewed including lower limits of detection, warning levels and action levels. In addition, the team will evaluate LANL's ability to identify, control, mitigate, evaluate and quantify unmonitored or unplanned effluent releases.

The radioactive waste management program review will include both solid and liquid low level (LLW), transuranic (TRU) radioactive wastes and mixed wastes (MW). Potential issues have been identified in the following areas: storage of LLW, TRU and MW; Waste Isolation Pilot Plant (WIPP) certification program; waste handling procedures and training; and storage of surplus materials not yet defined as waste. Areas of concern include TA-21, TA-33, TA-48, TA-54 and TA-55. The radiation specialists will coordinate this review with the waste specialists. Waste generation and transportation to storage or process facilities will be evaluated. Waste decontamination, processing, minimization and volume reductions operations will be evaluated. Characterization, packaging, storage and shipment of LLW, TRU, and MW will be reviewed. Compliance with WIPP acceptance criteria will be reviewed.

The program for decommissioning and decontamination (D&D) of facilities will be evaluated. Potential issues have been identified in the following areas: release of materials, property and equipment for unrestricted use; and adequacy of a formal D&D program for surplus, new and operating facilities. Historical records for facilities that have undergone D&D, or decontamination and subsequent release for unrestricted use will be reviewed. Plans for existing facilities awaiting D&D and operational facilities requiring D&D at the end of their lifetime will also be reviewed.

Inactive radioactive material waste sites and radioactively contaminated areas will be reviewed. The radiation specialists will coordinate these reviews with the groundwater and inactive waste site specialists. The radiation specialists' concerns include radiological monitoring of these sites, the degree to which radioactivity is migrating off-site into the environment and the associated off-site dose impact, if any.

All of the above programs require radiological analysis of various sample media. Laboratories (TA-48) performing these analyses will be evaluated to ensure that analytical techniques, records, equipment and QA/QC are adequate to produce accurate high quality data in a manner consistent with regulatory requirements. The radiation specialists will coordinate this review with the quality assurance specialists.

8.2 Required Records

Files will be reviewed as part of this Assessment, including documents not yet reviewed or received (e.g., classified documents, individual files, documents not yet identified). Specific documents and files to be reviewed as part of the Assessment include, but will not be limited to, the following:

- Annual Site Environmental Reports.
- Radioactivity related ambient air quality information.
- Radioactivity data for all sampled media.
- Inventories of air, soil, surface water, and groundwater radionuclide release points and quantities.
- Unscheduled or unplanned release reports.
- Radioanalytical quality assurance programs and procedures.
- Dose assessment methodologies, including assumptions, calculations, reporting, etc.
- Building plot plans showing equipment and locations.
- Building plot plans noting radiologically controlled areas.
- Description of radiation monitoring equipment, practices and procedures (e.g., calibration, maintenance, etc.).
- Reports or recommendations for upgrading radiation monitoring systems.
- Reports prioritizing new radiation monitoring installations.
- Off-site and on-site radionuclide sampling point criteria.
- Rad-waste management practices, policies, procedures, treatment, storage and disposal.
- NESHAPS reports (40 CFR 61 Subpart H).
- NESHAPS quality assurance plan.
- Environmental Protection Implementation Plan.
- Radioactive Waste Management Implementation Plan.
- Radioactive Waste Management Plan.

- Waste Minimization Plan.
- Pollution Prevention Awareness Plan.
- Meteorological Monitoring Plan.
- Emergency Response Plans.
- Decontamination and Decommissioning information, plans, and data.
- Environmental Monitoring Plan.
- Radioactive Effluent and On-Site Discharge Data (ODIS) Reports
- Radioactive waste performance assessment.
- Radioactive waste acceptance criteria.

9.0 Quality Assurance

The quality assurance (QA) portion of the Environmental Assessment will evaluate the site's compliance with environmental quality assurance requirements and proper practices. This evaluation will be performed by analyzing the LANL quality assurance operations from their top level management structure to their sampling and analysis gathering.

The Assessment will evaluate the site-wide implementation of the environmental quality assurance program. This evaluation will focus on the programmatic application of quality requirements and will include sampling and analysis activities, including the collection of process effluents and environmental samples, the performance of laboratory analysis to identify and quantify contaminants, as well as the evaluation and reporting of data.

9.1 Issue Identification

The QA procedures for the site's environmental programs will be reviewed for the effectiveness of implementation and compliance with DOE requirements. The review will include an assessment of the QA organization and structure development by LANL to meet the requirements of applicable federal and state regulations, DOE orders, QA standards such as ANSI/ASME NQA-1, and EPA guidance manuals. QA activities will be specifically evaluated in accordance with DOE Order 5400.1 and DOE order 5700.6B, quality assurance, as well as accepted industry practices and standards of performance. During the Assessment, the QA specialists will confer with the other environmental specialists to ensure that all potential quality assurance problems, related to environmental programs, are identified. Primary contacts are expected to be the QA representatives and personnel from the environmental monitoring activities.

Aspects of the laboratory QA program at LANL that will be reviewed include operator training, equipment calibration and maintenance, precision and accuracy evaluation, blank, split and spike sample analyses, sample handling and chain-of-custody procedures, data reduction and validation, reports, and documentation. Technical operations in the field will be observed to verify sample acquisition and transfer practices. Standard operating procedures for sampling and analysis will be reviewed to ensure proper implementation and conformance with accepted practices. Elements of the environmental QA program that will be reviewed include records management and the control of subcontractors. Internal quality assurance auditing and assessment practices will be examined. Furthermore, the results of interlaboratory test program participation by LANL laboratories, as administered by the DOE Environmental Measurements Laboratory for radiological analyses, the U.S. Nuclear Regulatory Commission Laboratories intercomparison program and the Environmental Protection Agency, will be evaluated. Quality assurance programs and procedures of off-site laboratories sub-contracted by LANL will be included in the Assessment. The following issues will be specifically reviewed:

- Implementation of documented QA practices;
- Analytical lab certifications for sample analyses at on-site analytical laboratories in Technical Areas (TA) 35, 50, and 59;

- Implementation of QA into non-operational areas, such as procurement, training, design, construction, and material handling and storage;

- QA qualification and oversight of off-site analytical laboratories;

- Oversight by LANL of off-site analytical laboratories;

- Environmental monitoring program at LANL.

As part of the pre-assessment preparation, a review of supplied documents was performed. Several telephone interviews resulted. From this preliminary review, several areas of concern have been identified.

The implementation of the QA Program has not been extended site wide. The implementation of the Environmental Quality Assurance Program appears limited to the Environmental Protection Group (EM-8) and the Environmental Chemistry Group (EM-9).

The adoption of environmental QA concepts by LANL upper management appears to be weak or lacking.

The audit and oversight of Environmental QA activities by DOE-AL, LAAO and LANL appears inadequate. This appears to be due, in part, to insufficient manpower to perform such assessment activities.

The 1988 Environmental Survey Report indicated weaknesses in application of QA/QC techniques to ensure validity of analytical data. Such weaknesses included the lack of chain-of-custody for environmental samples, obviation of check samples, and insufficient use of spikes and blanks.

9.2 Additional Records Required

This portion of the Assessment will consist of a review of pertinent documents and files. This records review will include documents not previously reviewed or received, individual files, and documents, which have not been identified at this time. Some specific documents and files that will be reviewed in this portion of the Assessment include, but are not limited to, the following:

- QA plans for LANL and Johnson Controls World Services;

- QA manuals and implementing procedures for the environmental monitoring and surveillance programs;

- Annual QA summary reports for the LANL.

- Environmental documents or contractual agreements for off-site analytical and radiological laboratory services;

- QA audits of environmental sampling and analysis at LANL;
- QA audits of off-site analytical and radiological laboratories under contract to LANL;
- Results of QA sample analysis of external performance evaluation samples from EPA or DOE Environmental Measurements Laboratory;
- Results of internal precision and accuracy studies of environmental analysis;
- Training records for sampling technicians and laboratory staff at the LANL and site contractors;
- Laboratory notebooks, data reporting forms, and sampling logbooks;
- Instrument maintenance, repair, and calibration records for laboratory and field equipment;
- Computer program validation and verification procedures and records.
- QA plans for the LANL site, as well as more specific plans for the individual lab or program level;
- Environmental sample integrity at LANL;
- Standard operating procedures for sampling and analysis activities;
- Records management procedures at LANL;
- Environmental monitoring compliance at the LANL.

10.0 Inactive Waste Sites

This portion of the Environmental Assessment will identify compliance issues related to inactive waste sites associated with the Los Alamos National Laboratory (LANL), both on and off site. The Assessment will focus on Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) program activities, Resources Conservation Recovery Act (RCRA) corrective action program activities, and inactive waste site management and cleanup activities conducted under state authority. Much of the effort will be coordinated with the groundwater, surface water, radiation and waste management specialists.

The Assessment will use the results of the Environmental Survey Preliminary Report (January 1988), Environmental Restoration Report, the LANL RCRA Part B application and the LANL Self-Assessment report (August 1991), as well as other available documents that characterize the inactive waste site areas of the facility.

Two primary laws govern waste site management activities at LANL: CERCLA and RCRA. Under CERCLA, the EPA ranks abandoned waste sites that contain hazardous waste according to their potential threat to human health and the environment. When the EPA ranked the Laboratory, the Agency determined that current environmental conditions did not warrant the placement of any site on the National Priority List (NPL). LANL has interpreted EPA's findings as reason to adopt RCRA provisions in establishing the LANL Environmental Restoration (ER) Program.

The Department of Energy/University of California (DOE/UC) RCRA permit includes a section titled the Hazardous and Solid Waste Amendments (HSWA) Module, which prescribes a specific corrective action program for LANL. Within the HSWA Module and the ER Report, LANL has stated that environmental programs carried out under RCRA must also meet the substantive requirements for CERCLA.

In 1984, the DOE Albuquerque Operations Office (DOE/AL) created an environmental cleanup program entitled the Comprehensive Environmental Assessment and Response Program (CEARP). When CEARP was initiated in 1984, no cleanup compliance agreements, orders, or permits under CERCLA or RCRA were in effect. Consequently, CEARP provided guidance for implementing and conducting assessment and remediation activities from 1984 until March 1987, when DOE Headquarters (DOE/HQ) created a national Environmental Restoration Program for all DOE Defense Program facilities. Although the ER and CEARP programs differ somewhat in scope, the intent is to fulfill the DOE/UC's obligations under both CERCLA and RCRA.

The LANL is geographically subdivided by Technical Areas (TAs). Historically, there have been 61 TAs designated, 4 of which were never built (TA-17, TA-34, TA-38, and TA-58) and 3 of which are not located within the LANL property boundaries (TA-44 in Los Angeles, California; TA-47 in Santa Fe, New Mexico; and TA-57 in Fenton Hill, New Mexico). Currently, operations of the laboratory are conducted in 32 active TAs. These TAs and other developed land uses account for only a small fraction (5.2 percent or 1,439 out of 27,800 acres) of the total land use.

In early 1987, EPA Region VI performed a RCRA Facility Assessment (RFA) to identify all potential Solid Waste Management Units (SWMUs) at LANL. Subsequent to the RFA, DOE/UC has prepared two SWMU reports in an attempt to update the RFA. These reports were released in 1988 and 1990, and identified approximately 2,300 potential release sites. EPA selected 603 SWMUs from DOE/UC's 1988 SWMU report which will require further site characterization. These 603 SWMUs will be evaluated through the implementation of 24 Operable Unit (OU) work plans. In addition, EPA has developed a subset of the 603 SWMUs which they consider as high priority SWMUs. Currently, this group contains 182 SWMUs, but this number will likely increase during the site characterization phase.

Potential release sites have been aggregated into 24 OUs under the Laboratory's ER Program to address site characterization and potential remediation. These OUs are logical groupings of potential release sites (SWMUs), which may include geographical aggregations that have similar physical features, contaminant sources or types, schedules, or likely response actions. OUs and the geographical LANL TAs do not necessarily coincide and some OUs may encompass more than one TA. To address site characterization and remediation development, each OU will have a separate work plan. These plans will be developed over four years, beginning on May 23, 1990 (the HSWA Module became effective May 23, 1990).

10.1 Issue Identification

The majority of the inactive waste site portion of the Assessment will consist of evaluating both current and planned remediation activities conducted under the LANL ER Program with respect to state and federal regulatory requirements and DOE Orders.

Based on the review of the 1988 Environmental Survey, certain areas will warrant particular attention to ensure adequate consideration by the ER Program. These areas include the following:

Los Alamos, Mortandad, Ancho, and Water Canyons are of concern since elevated concentrations of heavy metals, organics, and radionuclides have been detected in water and sediment samples downgradient of TAs in these canyons (TA-49 and TA-50). The inactive waste site specialists will confer with the surface water and groundwater specialists on the adequacy of work plans in delineating the extent of contamination and proposed corrective action measures.

Former radioactive and chemical liquid waste disposal sites at LANL have potentially contaminated surface and subsurface soils. Eleven sites were determined to be of particular concern. Of these eleven, Material Disposal Area (MDA) in TA-21, overflow from a cooling tower (TA-21-143) in TA-21, and storm water collection basins at TA-35 received the largest known volume of liquid waste.

Past spills and releases at LANL have potentially resulted in surface soil contamination, yet in many cases corrective measures (either removal action or remedial action) have not been implemented. Widespread use of PCB fluids in electrical transformers and capacitors have

resulted in the potential release and transport of PCBs into the environment. There are currently 3 TAs identified as containing leaking PCB transformers (TA-3, TA-35, and TA-53).

Management practices for disposing of chemical and radioactive waste at open dumps and storage areas (boneyards) may have increased the potential for exposure to LANL workers and area biota. Technical areas of concern are the Open Dump MDA-M in TA-0, Open Dump MDA-Z in TA-15, storage area in TA-36, and the suspected Dump at G Point in TA-15. In addition, lead soil contamination may have resulted from storing lead-based equipment on the ground in unprotected, unbermed locations. Of particular concern is the TA-53 storage area, which contains 25 uncovered, deteriorating drums of this material.

Numerous inactive landfills, burial areas, and former burn pits are known to contain radioactive and/or chemical waste which may act as a continual source of contamination to surface and subsurface soil, perched groundwater, and surface water. Insufficient surface stabilization measures will increase the potential for downgradient migration of contaminants. This may be evident at MDA-B in TA-21, MDA-C in TA-0, and at a suspected landfill in TA-33.

Previous waste disposal practices, on property formerly owned by LANL, may have caused a potential source of groundwater and soil contamination. Technical areas identified as potentially impacting off-site property are TA-00, TA-1, TA-31 and TA-45. The DOE Los Alamos Area Office recently notified 300 Los Alamos residents that previous disposal practices of septic tank and construction debris resulted in the disposal of this material on privately owned property in Los Alamos. Three inactive landfills on non-DOE owned property were previously used by LANL. These landfills include the Los Alamos County Municipal Airport landfill, disposal pits off DP Road, and a gun parts burial area on the North Mesa. The types of LANL waste potentially in the Airport landfill include building and construction debris, uranium, oils, and high explosive contaminated wastes. The pits near DP Road potentially received chemical wastes. Many of these locations are near populated areas, consequently, exposure pathway investigations will be evaluated.

The initial phase of the Assessment will investigate the regulatory framework directing the evaluation of inactive waste sites at LANL. Since the ER Program has been prepared in accordance with the HSWA Module of LANL RCRA Part B permit, further research will be conducted into the application and integration of DOE Order 5400.4 (CERCLA policies and procedures) and DOE Order 5400.2A (Environmental Compliance Issue Coordination) into the ER Program. Particular attention will be placed on DOE 5400.4, Section 7a., b., and c. to identify 1) whether LANL has entered into Interagency Agreements (IAGs) and/or Federal Facility Agreements (FFAs) with Federal, state, and local entities and 2) the Laboratory's justification for adopting the RCRA corrective action process (DOE 5400.4, Section 7c.).

The second phase of our Assessment will analyze LANL ER Program management and organization. Four sections within the ER Program were identified for further research by the assessment team. These areas include the Laboratory policies and procedures for conducting 1) inactive waste site identification, 2) prioritization for further investigative work, 3) characterization, and 4) corrective action. For each section, the Assessment team

will verify the appropriateness and completeness of the policies and procedures. As an example, the consistency of LANL site prioritization will be evaluated against the assessment teams' field observations. Also, the adequacy of LANL proposed corrective action schedule, allocation of resources, and remedial action selection process will be evaluated.

When evaluating the LANL RCRA corrective action program, the Assessment team will verify that all measures in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) have been satisfied. CERCLA emphasizes the importance of early, constant, and responsive relations with communities affected by inactive hazardous waste sites. Public participation requirements are an important component of the NCP, consequently, the LANL community relations activities will be assessed.

Finally, the Assessment will evaluate any areas of the site that should be considered for CERCLA requirements such as new sites or releases identified since DOE's 1988 Environmental Survey, and EPA's 1988 RCRA Facility Assessment. In addition , the Assessment will verify whether the ER program has developed policy statements where environmental regulations overlap, such as the integration of CERCLA requirements and RCRA close and post-closure plan into the RCRA Corrective Action Program.

Currently, the LANL 1989 Five Year Plan for Environmental Restoration and Waste Management contains 55 projects termed remedial actions which involve the RCRA Corrective Action Process. Since a limited amount of remedial activity has been initiated at inactive waste sites, the Assessment will evaluate the following issues at LANL:

- Compliance with existing consent orders, compliance agreements, notice letters, pertinent correspondence with Federal/State regulatory agencies and other similar regulatory obligations.

- Schedule and planning status for remedial work at inactive SWMUs included as part of the RCRA Corrective Action Program conducted under the site's RCRA Part B permit application.

- Schedule and planning status for corrective action measures at inactive waste sites located on non-DOE owned property. In particular, community relations program for all citizens which may be impacted by these inactive waste sites.

- Proper CERCLA compliance for reporting hazardous substance activity for all LANL inactive sites which have been sold or transferred to other authorities.

- Effective communication and planning among all levels of the Laboratory ER organization structure.

- General compliance with other CERCLA related activities such as notification of releases and spill reporting.

- Program design and procedures developed to prioritize existing sites, and to identify and evaluate as yet unidentified past waste disposal sites or releases.

- Clarity and usefulness of the LANL inactive waste site data base and other similar data bases.

10.2 Records Required

An extensive file and document review will be required as part of the Assessment including documents not yet received or identified by the assessment team such as classified documents and individual files. Specific documents and files to be reviewed as part of the Assessment include, but will not be limited to, the following:

- Site Specific Plan for Environmental Restoration and Waste Management

- Preliminary Assessment(s) - LANL CERCLA Units

- Preliminary Assessment(s) - LANL Solid Waste Management Units

- List and status data base for inactive waste sites

- CERCLA Section 103 notifications and updates

- Environmental Consent Orders

- Documentation of inactive waste site prioritization, characterization, investigation and removal actions.

- Community Relations Plan - LANL Site and any additional community relations documentation

- LANL Site risk assessment documents

- RI/FS and RFI/CMS Work Plans

- Closure Plans

- Any additional correspondence or planning documents regarding the status of inactive waste site investigation under CERCLA or RCRA Corrective Action.

11.0 National Environmental Policy Act

11.1 Issue Identification

The objectives of the National Environmental Policy Act (NEPA) portion of the Assessment are (1) to evaluate the NEPA management structure and review processes of DOE-AL, DOE-LAAO, and the LANL contractor (the University of California); (2) to identify problems that may lead to inappropriate procedures or inadequate NEPA documentation; and (3) to ensure consistency with the NEPA Council on Environmental Quality regulations, and with DOE NEPA Guidelines, Orders, and Memoranda. The overall goal of the NEPA portion of the Assessment is to foster improved and environmentally sound decisionmaking for those DOE actions having the potential for significant impacts on the human environment.

A NEPA protocol, developed by the Office of NEPA Oversight (EH-25) and ORNL, includes worksheets that focus the team's line of inquiry to ensure a comprehensive, consistent approach to the assessment. The content of the worksheets is divided into seven main areas as follows:

- Overview of NEPA issues
- Management structure (overall organization, training, use of contractors, recordkeeping, etc.)
- NEPA compliance planning
- NEPA/Comprehensive Environmental Response, Compensation, Liability Act (CERCLA), NEPA/Resources Conservation Recovery Act (RCRA) integration
- Determination of level of NEPA review required
- Procedural aspects of NEPA documents
- Technical content of NEPA documents

The general approach to the Assessment will include interviews with the Field Office, Area Office, and contractor staff responsible for the NEPA procedures and review process; project and program managers; the legal and public relations staff and the classification manager; and others, as the need arises. The use of categorical exclusions; memoranda-to-file (MTFs), and action description memoranda (ADMs) will be evaluated for consistency with DOE guidelines.

11.2 Records Required

As part of the NEPA portion of the Assessment, files will be reviewed, including documents not previously received or reviewed (e.g., classified documents, individual files, and/or documents not previously identified). Specific documents and files to be reviewed as part of the Assessment include, but will not be limited to, the following:

- Records that locate, identify, and describe both on-site and off-site occurrences of the following resources that may be affected by facility activities: endangered and threatened species and their critical habitats; bald and golden eagles and migratory birds, and their nests; wild horses and burros; waterways, including waters and navigable waters of the United States, floodplains, wetlands, and wild and scenic rivers; national recreation trails; wilderness and wilderness study areas; sacred Native American sites; prime/unique farmland; prehistoric and historic sites, including archaeological sites; and federal lands (e.g., National Forests).

- Documentation of consultation with agencies responsible for the administration of the resources listed above (e.g., Section 7 consultation with the Department of the Interior on endangered species).

- Policies and procedures for implementing related regulations (e.g., TSCA, RCRA, CERCLA, Clean Water Act, Clean Air Act, Safe Drinking Water Act, and Noise Control Act).

- Any facility-specific, Area Office, or Field Office NEPA guidance or policies.

- Any correspondence or guidance which refers to delegation of authority to make NEPA determinations.

- Capital budget files and other appropriate records or proposed actions or initiated changes in operation.

- Records of ongoing and proposed actions or initiated changes in operation (e.g., work being done under contract to others; DOE sponsored research; activity data sheets; conceptual design reports; and lists of general plant projects, line items, maintenance projects, and work orders).

- Lists of ongoing and proposed CERCLA response actions.

- Lists of ongoing and proposed RCRA closures and corrective actions.

- All NEPA-integrated documents prepared in support of remedial action.

- State or local "NEPA-type" Statutes and regulations.

- Description of any litigation related to NEPA

- MTFs related to ongoing actions.

- Documents used to make, support, or record NEPA determinations (e.g., Environmental Evaluations, Environmental checklists, or ADMs) prepared since January 1990.

- All environmental assessments (EAs) and environmental impact statements (EISs) that are still used for assessment of all ongoing or proposed actions.

- Documents and studies that are cited in support of major aspects of facility EAs and EISs (e.g., biological assessments for endangered species or engineering details of projects).

- Monitoring and mitigation reports available for EAs and EISs.

- Printout from a database which tracks NEPA documents (if such a database exists).

APPENDIX C

ENVIRONMENTAL SUBTEAM DAILY AGENDA

ENVIRONMENTAL SUBTEAM DAILY AGENDA

WEEK 1 9/23-28/91		Monday, 9/23	Tuesday, 9/24	Wednesday, 9/25	Thursday, 9/26	Friday, 9/27	Saturday, 9/28
Air T. Eckle	**AM**	Orientation	Orientation	Nonradiological air programs discussion: programs and procedures; source inventories; new source reviews; effluent controls; effluent monitoring; permitting and reporting; regulatory and order awareness; ambient air quality surveillance; air requirements for TSDF; accidental releases	Facility observation and interviews TA-3 South Mesa Power Plant; Asphalt Concrete Plant; lead pouring; freon recovery/recycle; Paint Booth	Facility observation and interviews TA-3 South Mesa Beryllium Shops: 3-39, 3-102, 3-141, Service Station, 3-36 Interview: J. Vance, State Beryllium Inspector	Document review
	PM	Orientation	Orientation	Continued	Observe ambient air quality monitoring station	Discuss air programs, LAAO	Document review
Surface Water/ Drinking Water R. Voeller	**AM**	Orientation	Orientation	Interviews, document collection Tours of wastewater facilities TA-3, TA-35, TA-18, TA-46,	Interviews, document collection Management systems for water, wastewater and stormwater: EM-8, S. Rae	Interview, document collection Management and oversight,LAAO (G. Bellows)	Document review
	PM	Orientation	Orientation	Tours of Wastewater Treatment Facilities TA-21	Tours of Wastewater Treatment Facilities in TA-16, TA-9	Tours of Wastewater Facilities in TA-50-1 and TA-53 lagoons	Document review
J. Fichera	**AM**	Orientation	Orientation	Interview: M. Saladen, M. Alexander, T. Glasco; inspect wastewater facilities TA-3, TA-18, TA-35, TA-46	Interview: S. Rae, EM-8 re: water quality and toxics, overview on management; observed diesel fuel spill site and cleanup at TA-3 Power Plant	Interview LAAO (G. Bellows, S. Fong, J. Phoenix)	Document review
	PM	Orientation	Orientation	Inspect wastewater facility TA-21	Examine wastewater treatment facilities TA-16, TA-9	Examine wastewater treatment facilities TA-50-1, TA-53 - lagoons	Document review
Groundwater/Soils J. Rea	**AM**	Orientation	Orientation	Presentation by EM-13 Environmental Restoration - R. Vocke, L. Schott	Interview: A. Stoker, JCI Manager/Engineer, D. Sneesby, ENG-8, G. Bryant, JCI re: Potable Water Well Fields	Interview: T. Foxx, K. Bennet, Biological Biota Resources N. Williams, S. Rae, Water Quality, GW discharge permits, compliance status, disposal wells	Document review of test boring/logs and monitoring wells reports, potable water wells, disposal wells

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WEEK 1 9/23-28/91		Monday, 9/23	Tuesday, 9/24	Wednesday, 9/25	Thursday, 9/26	Friday, 9/27	Saturday, 9/28
	PM	Orientation	Orientation	Presentation by Environmental Protection EM-8, K. Hargis, P. Ferenbaugh Indian lands, groundwater/soils issues	Interview: A. Stoker, Chief Geologist, Sediment Sampling Programs, B. Purtymun, Groundwater and Sediments	Working lunch with P. Fresquez, Health Physics Biota Program; interview A. Barr re: hazardous/solid waste section	Document review
Waste Management C. Summers	AM	Orientation	Orientation	Interview: A. Gustavsson, EM-7 Section Leader Interview: J. White, EM-8 Section Leader	In-depth tour, TA-54 with Rad Specialist Interview with area waste manager Records review of buried wastes	In-depth tour of TA-53 lagoons; interview A. Barr	Document review
	PM	Orientation	Orientation	Interview: J. Ellvinger (DOE Contractor) and S. Slaten, B. Snow, M. Zamorski (LAAO, LANL) re: HW management M. Harrison, Branch Chief for EH&S at DOE LAAO	In-depth tour, TA-50 Interview with HW management area supervisor Application of LDR to LANL wastes; discussion with relevant HW manager/supervisor	Interview:s S. Zygmunt, Acting Group Manager, EM-7	Document review
T. Collins	AM	Orientation	Orientation	Interview: A. Gustavsson, EM-7 Section Leader, J. White, EM-8 Section Leader, and P. Josey, EM-7 Team Leader	Interview: J. Corpion re: review of waste characterization	Interview: K. Hargis; tour TA-3, SAAs, and TAAs Review waste stream characterization and review waste minimization results	Document review
	PM	Orientation	Orientation	Interview LAAO Waste Management Specialists J. Bellows, LAAO	Continued	Continued	Document review
Waste Management R. D'Ermilio	AM	Orientation	Orientation	Interview counterpart - A. Gustavsson, J. White, J. Corpion, B. Sho, M. Harrison	Document review	In-depth tour of TA-53 lagoons; interview A. Barr	Document review
	PM	Orientation	Orientation	Continued	Inspect TA-50, Bldg. #1 Presentation by J. Buckholtz on rad liquid waste treatment, TA-50	Tour of Los Alamos County Landfill; interview with J. Corpion Interview: S. Slaten, L. Cummings	Document review

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WEEK 1 9/23-28/91		Monday, 9/23	Tuesday, 9/24	Wednesday, 9/25	Thursday, 9/26	Friday, 9/27	Saturday, 9/28
Toxic and Chemical Materials C. Banzer	AM	Orientation	Orientation	Interview: K. Hargis, re: TCM Management Program Overview Interview: T. Sandoval, C. Jacques re: PCB Inventory & Annual Report Interview: S. Rae, R. Morales re: PCB Program	Interview: L. Hupke, A. Gustavasson re: PCB storage Tour TA-54, Area L Interview: S. Francis, J. Harper, re: PCB disposal; tour TA-54, Area G	Interview: M. Alexander re: spill records, S. Zygmunt re: PCB incinerator requirements	Document review
	PM	Orientation	Orientation	Interview: M. Bailey, M. Brown, JCI re: PCB inspection, sampling	Interview: M. Aquilera, PCB Retrofill Operation; tour TA-53	Inspect PCB transformers at TA-3, TA-35	Document review
S. Young	AM	Orientation	Orientation	Interview: K. Hargis on SARA Program overview Review SARA reports	Interview Emergency Occurrence Reporting of Releases, A. Elliott, R. Goodell, Emergency Operations for Releases, J. Griffith	Interview: S. Dalton re: Hazmat packaging Interview: re: SARA overview, T. Gunderson, J. Jackson	Document review
	PM	Orientation	Orientation	Interview: C. Eberhart re: SARA 313, Bureau of Indian Affairs - J. Sorrell Interview: re: SARA Los Alamos County Fire Chief - D. Visconti Interview: J. Griffith, LANL Emergency Response	Interview hazmat information/SARA B. Hargis, W. Hargraves	Followup SARA interview Review SARA documents	Document review
Quality Assurance J. Melloni	AM	Orientation	Orientation	Review QA program organization and structure, policies and procedures Interview: R. Patterson, QA Coordinator, C. Leasure, Group Leader, EM-9	Review records management procedures, EM-8, EM-13 Interview EM-8, EM-13 Group Leaders and personnel	Continue review of records management and control Tour EM-7	Document review
	PM	Orientation	Orientation	Continued	Tour record storage facilities, EM-9 and EM-8 Interview EM-9 and EM-8 Section Leaders	Review EM-9 record storage within sections	Document review

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WEEK 1	9/23-28/91	Monday, 9/23	Tuesday, 9/24	Wednesday, 9/25	Thursday, 9/26	Friday, 9/27	Saturday, 9/28
H. Rivera	AM	Orientation	Orientation	Review of laboratory operation - Inorganic, Radiochemical and Bioassay Labs, TA-59 Interview Laboratory Manager, Laboratory personnel	Review of laboratory operation - Inorganic and Radiochemical Laboratories, TA-59, Sample Management, Systems Management (continued) Interview Laboratory QA personnel	Review of Laboratory operations - Organic Analysis Laboratories, TA-59 Interview Laboratory Manager, Laboratory personnel	Document review
	PM	Orientation	Orientation	Continued	Continued	Continued	Document review
P. Pifalo	AM	Orientation	Orientation	Visit LAAO, interview S. Slaten, Environmental Engineer, B. Snow, QA Engineer, J. Bellows, Manager	Interview: D. Winston, Corporate Oversight; visit Operations Directorate; interview B. Patterson, Operations Quality and Contractor Quality Personnel; interview A. Tiedman, Operations Director	Interview: J. Heinz and N. Morley, AL Office and review LANL audit status and procedures at the Area Office in Los Alamos	Interview: J. Jackson, LANL Deputy Director
	PM	Orientation	Orientation	Continue interview at LAAO and document review	Document review	Interview: C. Frostenson, LAO Environmental Team Leader	Document review
Radiation P. Jones	AM	Orientation	Orientation	Interview: D. Van Etten, P. Fresquez, L. Hoffman, B. Gallaher, A. Stoker, W. Hansen, B. Bowen, T. Buhl- Environmental Radiological Monitoring Program personnel, and presentation on various Technical Area activities	Tour TA-55 Plutonium Facility - stack air sampling Interview: J. Whicker, D. Zerwelch	Tour TA-53 - LAMPF - stack air sampling Interview: R. Werbech, S. Simmonds	Document review

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WEEK 1 9/23-28/91		Monday, 9/23	Tuesday, 9/24	Wednesday, 9/25	Thursday, 9/26	Friday, 9/27	Saturday, 9/28
	PM	Orientation	Orientation	Interview: T. Buhl, J. Wenzel, T. LaMonte - stack air sampling Document review	Tour TA-21, Tritium System Test Assembly - stack air sampling; Interview: R. Pierce, M. King, J. Anderson, W. Harbin Document review	Tour TA-16, WETF - stack sampling; tour TA Liquid Waste Processing Facility - stack sampling; Interview: S. Zygmont, R. Weeks, R. Hemphill, J. Carnes, R. Nolen; Document review	Document review
D. Allard	AM	Orientation	Orientation	Meet with T. Buhl, Env. Management and other discipline coord. for sitewide Env. Radiological Monitoring Program re: presentations on Technical Areas	Examine outfalls at TA-2, TA-21, and TA-41 areas in LA and DP Canyons	Examine TA-46, Laser Isotope Separation Facility Review records; interview area Environmental Rad. Protection personnel	Document review
	PM	Orientation	Orientation	Examine TA-41 W - Site (Bldg. 1, 4); examine TA-2 Omega Site Review records; interview area Environmental rad. protection personnel	Examine TA-55 PF - Site (Bldg. PF 4) Review records; interview area Environmental radiological protection personnel	Examine TA-50 WM - Site Liquid-waste Treatment Plant Review records; interview area Environmental rad. protection personnel	Document review

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WEEK 1 9/23-28/91		Monday, 9/23	Tuesday, 9/24	Wednesday, 9/25	Thursday, 9/26	Friday, 9/27	Saturday, 9/28
Radiation M. Lees	AM	Orientation	Orientation	Environmental radiological monitoring program personnel and presentation on various technical area activities	TA-2 Omega West Reactor Bldg. L Interview: Manager re: Accident Plan, resin, disposal: lab waste, liquid processing radiological controls	TA-53 mixed wastes issues; TA-50 Size Reduction Facility	Records review
	PM	Orientation	Orientation	Interview: J. Graf re: health physics policy and programs, R. Devine, Health Physics Analyst, air samples Document review	TA-2 (continued) Records review	TA-54 Bldgs. 11, 82 Areas G, L Interview: J. Harper, A. Gustavsson re: Waste Management Plan, PERU Cert. Plan, performance assessments, closure plans, waste compacting, SOPs, training, mixed waste procedures Records review	Records review
Inactive Waste Sites P. Feuerbach	AM	Orientation	Orientation	Presentation and interviews with Environmental Restoration Group - R. Vocke, L. Soholt, S. Wagner; LAAO, S. Slater; NMED, G. Gonzales	Interview: T. Gunderson, D. McInroy Program review of Environmental Management and Environmental Compliance	Interview: D. Garvey and T. Foxx, Review of Natural Resources; L. Soholt, Interim Remedial Measures; A. Barr, J. White; Solid and Hazardous Waste Management	Document review
	PM	Orientation	Orientation	Presentation and interview Environmental Protection Group - K. Hargis, R. Ferenbaugh, A. Stokes, A. Barr	Interview: B. Vocke, C. Armijo, and S. Wagner re: program review of Community Relations	Interview: A. Barr, J. White, Solid and Hazardous Waste Management	Document review

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WEEK 1 9/23-28/91		Monday, 9/23	Tuesday, 9/24	Wednesday, 9/25	Thursday, 9/26	Friday, 9/27	Saturday, 9/28
Inactive Waste Sites M. Heuberger	**AM**	Orientation	Orientation	Interview Environmental Restoration Group Leaders: R. Yocke, L. Soholt, S. Wagner, S. Slater, LAAO, G. Gonzales, NMED	Interview: M. Ray, EM-13 Records Management Project Leader and D. York, EM-13 Resource Planning Project Leader	D. McInroy, EM-13 Compliance Coordinator T. Norris, EM-13 Health & Safety Project Leader	Document review: test boring, monitoring logs, well logs, supply wells, disposal wells, hydrogeologic data
	PM	Orientation	Orientation	Presentation/ interview Environmental Protection Group Leader EM-8 K. Hargis, R. Ferenbaugh, A. Stoker, A. Barr	Interview: C. Myers, EES Team Leader, J. Gardner, EES, D. Cash, EES	Interview: R. Conrad, P. Fresquez	Document review: test boring, logs monitoring , well logs, supply wells, disposal wells, hydrogeologic data
NEPA J. Pulliam	**AM**	Orientation	Training Interview with EM-8 NEPA Staff Garvey, Pendergrass, Kraig	Accumulate Guidance documents	Guidance documents	Guidance documents	Followup document review; file searches; field observations
	PM		Briefing, site tour	Continued	Guidance documents	Guidance documents	NEPA team meeting; discuss responsibility for findings
M. Peters	**AM**	Orientation	Orientation	NEPA document and NEPA document data base review	NEPA documents	NEPA documents	
	PM		Continued	Continued	NEPA documents	NEPA documents	NEPA team meeting
W. Schramm	**AM**	Orientation	Orientation	Review documents	D. George, LAAO Review documents	Review documents	Followup interviews
	PM			Interview Garvey with G. Eddlemon	Review documents C. Bare, R. Prommel, ENG-1	Interview: D. Chastain, ENG-1 Review documents	NEPA team meeting

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WEEK 1 9/23-28/91		Monday, 9/23	Tuesday, 9/24	Wednesday, 9/25	Thursday, 9/26	Friday, 9/27	Saturday, 9/28
NEPA G. Eddlemon	**AM**	Orientation	Orientation	Document reviews Telecons with prospective interviewees	Interview: D. George, LAAO, E. Franklin, L. Byars, CPM, FIN D. Chastain	Interviews: D. Sankey, E. Janney, G. Garcia, R. Gutters, M. Patterson, V. Lewis, G. Travis, A. Sahota, N. Simpson, J. Herring, N. Medina, FIN; A. Valentine, D. Griechen, ADNWT; M. Brandt, LANSCE; C. Blackwell, T. Cull, S. Helmick, ADCM; J. Lopez, JCI; W. Myers, ADET; D. Garvey, EM-8	Followup interviews
	PM	Orientation	Orientation	Continued	C. Bare, R. Prommel, ENG-1, E. Janney, ADCM Collect documents (Project lists)		NEPA team meeting
C. Trettin	**AM**	Orientation	Orientation	Document review	Document review	Document review	Followup document reviews, file searches, field observations
	PM				Document review	Document review	NEPA team meeting
S. Simpson	**AM**	Orientation	Orientation	Interview: D. Kraig, EM-8 re: NEPA/RCRA integration	Interview: D. Kraig, EM-8 and B. Vocke, EM-13	Document review	Followup document reviews, file searches, field observations
	PM				L. Cummings and J. Laeser, LAAO Office General Counsel	Interview: T. Foxx, EM-8	NEPA team meeting
B. Kemp	**AM**	Orientation	Orientation	Interview: C. Armijo, PA, C. Oritz, CRM-DO	Document review Interview: B. Lawson, EM-8	Document review and followup	Followup document reviews, file searches, field observation
	PM			Interview: D. Garvey, EM-8, S. Auguston and E. Sandoval, OS-6	Interview: S. McKin, T. Foxx, C. Eberhart, EM-8	Document review and followup	NEPA team meeting

ENVIRONMENTAL SUBTEAM DAILY AGENDA

WEEK 2 9/30-10/5/91		Monday, 9/30	Tuesday, 10/1	Wednesday, 10/2	Thursday, 10/3	Friday, 10/4	Saturday, 10/5
Air T. Eckle	**AM**	Facility observation and interviews: TA-16 S-site, 16-195 Service Station, 16-340 Solvent Usage, Burning Areas, 16-540 Steam Plant, 16-1409 Incinerator	Facility observations and interviews: TA-35 Ten Site, TSL-7 Air Filter Bldg., TSL-34 Sodium Bldg., TSL-213 Target Fabrication (Be), TA-11 Test Burn, Telecon with NMED: Open Burning	Facility observation and interviews: TA-21, DP-30 Salt Casting Shop, DP-31 Electronics and model shops, DP-155 TSTA, DP-357 Steam Plant, TA-3, SM-30 Paint Booth	Facility observation and interviews: TA-50 WM site, WM-69 Size Reduction, 50-1 Exhaust Stacks	Discussed radiation stack monitoring program with HS-12, checked information in emissions data base	Leave Santa Fe
	PM	TA-36 Open Burn Area	Continued	DP-155, TSTA, Tritium monitors calibration and operation	TA-54, Area G Landfill, TA-50 controlled air incinerator	Discussed gas/particulate separator at Fenton Hill with EES-4	
Surface Water/ Drinking Water R. Voeller	**AM**	Interviews, document collection for wastewater characterization (EM-8) Interview: S. Rae, R. Bohn re: stormwater characterization	Interviews, document collection for water discharge permitting: S. Rae, R. Bohn	Interviews, document collection, sanitary wastewater treatment operation and maintenance: JCI, Env. and Utilities	Outfall yards and facility inspections JCI warehouse	Document collection and review, EM-8	Leave Santa Fe
	PM	Technical area interior, wastewater conveyance and stormwater (include interview with Environmental Coordinator for: a)TA or sector b)Operating Division TA-54, TA-2	NPDES sampling	Technical area tours and buildings wastewater conveyance and stormwater CMR Facility	Outfall tours technical areas TA-16 (numerous HE wastewater discharges)	Facility inspections and outfall tours, TA-35	
J. Fichera	**AM**	Interview: B. Chroninger, ENG-6 re: backflow prevention and cross-connection control program	Inspect potable water well fields with N. Williams, T. Glasco, D. Sneesby, G. Bryant Coordinate with GW Specialists	Inspect facilities at TA-21, INC-4, liquid rad waste treatment plant, steam plans, TSF, Geophysics Group	Inspect Fenton Hill Site, interview J. Skalski Coordinate with GW Specialists	Inspect facilities at TA-53, MPF-18, MPF-365, MPF-19, MPF-15 tank farm MP-8	Document review
	PM	Interview: M. Alexander, re: SPCC plan and ASTs (coordinate with TCM specialist)	Continued	Inspect: facilities at TA-41, WX-5, MAE-4	Document review	Inspect TA-46, Bldgs. 24, 41, 76	Continued

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WEEK 2 9/30-10/5/91		Monday, 9/30	Tuesday, 10/1	Wednesday, 10/2	Thursday, 10/3	Friday, 10/4	Saturday, 10/5
Groundwater/Soils J. Rea	AM	Examine Groundwater wells/springs in Mortendad Canyon with Chief Geologist B. Purtymun and A. Stoker, coordinate with Radiation Specialist	Field inspection of potable water well fields with N. Williams and T. Glasco, coordinate with Surface Water Specialists; observe GW demonstration sampling event at PM-5	Interviews: D. Garvey, environmental assessments; S. McLin, hydro team; P. Fresquez, waste site studies; J. Salazar, waste site technician	Observation of Fenton Hill Site, A. Stoker, B. Purtymum, D. Bergman, V. Ford Porter, J. Fichera	Interviews: Hydrology, T. Buhl, HP foodstuff; LAAO, S. Slaten, A. Fong	***Sediment seep and spring sampling event via raft on Rio Grande River with B. Purtymun, A. Stoker Oct. 7,8,9
	PM	Continued	Field Inspection of potable wells and Los Alamos Canyon with A. Stoker	Continued re: sediment sampling and biota environmental surveillance programs	Continued re: groundwater soils, sediment biota issues	Interview: T. Hakonson, W. Hanson, environmental surveillance	
Waste Management C. Summers	AM	Interview: C. Muckelroy, E. Horst, NMED Compliance Inspectors (in SF)	Discussion with relevant EM staff regarding SPCC Plan Inspection of SPCC tanks	Tour of TA-54, Area L	Discussion with relevant EM staff regarding HW Contingency Plan; begin plan assessment	Review: JCI paint spray booth solids disposal practice; investigate: disposal of solids after release of fuel oil to ground on 25th, 26th	
	PM	Interview with training manager Begin review of training records	Continue review of training records Discussion with A. Tiedman re: permit application signatory	Tour of TA-50, Area L review (accompanied by C. Muckelroy, NMED) of selected HW manifests, exception reports	Continue plan assessment, fire department, hospital, security	Blue card referral re: training (deferred); safety person writing the card was unavailable	
T. Collins	AM	Tour TA-3 to verify compliance with waste characterization and minimization requirements; Inspect SAAs and TAAs	Review UST program - J. Carmichael, EM-8 Staff Member	Tour TA-46 to verify compliance with waste characterization and minimization requirements	Tour TA-46 Interview: A. Montoya, EM-7 on HAZWOPER Training,	Review SAAs and TAAs at TA-35; Interview: P. Josey, T. Grieggs	Document review
	PM	Tour TA-39 to verify compliance with waste characterization and minimization requirements, Inspect SAAs and TAAs	Review training program and records - R. Phillips, Acting Laboratory Training Director	Tour TA-3 to verify compliance with waste characterization and minimization requirements	Training Records Tour TA-18, SAAs and TAAs, Interview: G. Brooks	Tour Los Alamos Airport for UST and waste management compliance, Tour TA-35	Leave Santa Fe

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WEEK 2 9/30-10/5/91		Monday, 9/30	Tuesday, 10/1	Wednesday, 10/2	Thursday, 10/3	Friday, 10/4	Saturday, 10/5
Waste Management R. D'Ermilio	AM	Inspect rad/solid waste dumpster, TA-50, TA-53, non-controlled areas	Inspect TA-16; Discussion with solid waste incinerator operators and observation of incinerator operation and explosive burn operations	Inspect TA-53 Bldg. 25, mixed waste generation, also Bldg. 2; TA-53 followup interviews with salvage material management	Inspect TA-3, SM-30, MEC-10, Machine Shop; TA-3, SM-30, MEC-DO, Uranium Machine Shop	Continue inspection of TA-2, SM-29, CMR Bldg. mixed waste generation, inspect TA-3, SM-66, Sigma; TA-55, Plutonium Facility	Leave Santa Fe
	PM	Interview: JCI Solid Waste Management person Inspect salvage operations at TA-53 and JCI Salvage Yard	Interview E. Nunez, L. Ledoux re: landfill operation, county landfill LAAO	Inspect: TA-50, Bldg. 1, waste/ mixed waste generation in labs.	Inspect TA-2, SM-29, CMR Bldg.; TA-2, INC-5, Omega Site	Inspect TA-21	
Toxic and Chemical Materials C. Banzer	AM	Interview re: S. Slaten, S. Fong, J. Ryan, LAAO TCM Program Interview re: TCM Program Review Hazardous Chemical Management Systems: procurement, tracking, inventory, handling/storage: C. Huth, A. Rivera, S. Saylor	Interview Hazardous Chemical Handling/storage Biochemistry LS-2 T. Whaley, R. Walters, S. Cram Tour TA-43 re: hazardous chemical handling and storage in Biochemistry Tour TA-35 ASTs	Interview Hazardous Chemical Laboratory procedures, records Lab - Analytical Manager re: handling/ storage, J. Phillips, B. Smith, D. Spall, G. Bentley, J. Dahlby (CLS-1); TA-3	Interview INC-4, re: Hazardous chemical handling; S. Kinkared, G. Kubas, C. Burns; tour INC-4 laboratory	Tour compressed gas facility TA-3-SM170; EM-9 Laboratory TA-59; interview TA-59 C. Leasure, re. hazardous chemical program	Leave Santa Fe
	PM	Interview: S. Rae, M. Alexander re: AST	Interview - Hazardous chemical handling/storage D. Knab Analytical Lab HS-9 TA-59 Tour Analytical Lab HS-9	Inspect Analytical Lab-Chemical Storage Chemistry and Materials (CLS-1); TA-3	Interview AST program at TA-15, M. Burns; tour AST-M-4	Tour TA-3, PCB transformer inspections	
Toxic and Chemical Materials S. Young	AM	Interview: S. Fong, J. Ryan, S. Saylor re: LAAO TCM Program; interview S. Rae, M. Alexander re: AST	Interview Hazardous Chemical Warehouse Manager - Staff Tour Hazardous Chemical Warehouse Areas TA-3-30, 31	Interview and tour re: chemical management TA-16	Interview and tour re: chemical management TA-46	Interview and tour re: chemical management at TA-53	Leave Santa Fe

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WEEK 2 9/30-10/5/91		Monday, 9/30	Tuesday, 10/1	Wednesday, 10/2	Thursday, 10/3	Friday, 10/4	Saturday, 10/5
	PM	Review Hazardous Chemical Management Systems: procurement, tracking, inventory, handling/storage: C. Huth, A. Rivera, J. Saylor	Tour Hazardous Chemical Acquisition and Management TA-3 Inspect TA-3 Machine Shop	Continue interview at VWR re: chemical acquisition	Continue at TA-18	Continue at TA-9	
Quality Assurance J. Melloni	AM	Review of operations - JCI Interview QA Manager and QA Personnel	Review of audit and assessment programs and corrective action system EM-7	Review of audit and assessment programs and corrective action system EM-8, 9	Review document control procedures EM-7, 8	Review of document control procedures EM-7; LLW records EM-7	Leave Santa Fe
	PM	Continued	Review of audit and assessment programs and corrective action system EM-8	Review of audit and assessment programs and corrective action system; document control procedures EM-9, 13	Tour of MEC-8 calibration laboratory	Continued	
H. Rivera	AM	Review of laboratory operations - Organic Analysis Laboratories (TA-59); review of QA laboratory Review of Laboratory operations - Tissue Analysis Laboratory (TA-59)	Review of laboratory operations - Waste Treatment Lab (TA-50); Interviews - Laboratory Manager, Laboratory personnel, Laboratory QA personnel	Review of Laboratory operations - Waste Treatment Laboratory (TA-50) continued; Interviews - Laboratory Manager, Laboratory personnel, Laboratory QA personnel	Review of Laboratory operations - JCI Waste Laboratory Interviews - Laboratory Manager, Laboratory personnel, Laboratory QA personnel	Review of Laboratory operations - Mixed Waste Laboratory (TA-35)	Leave Santa Fe
	PM	Continued	Continued	Continued	Continued	Revisit laboratories at TA-59 Interviews: Laboratory Manager, Laboratory personnel, Laboratory QA personnel	
Quality Assurance P. Pifalo	AM	Visit Environmental Protection, EM-8; Interview: K. Hargis, Manager and T. Buhl, Sampling Supervisor	Interview: C. Rzeszutko, EM-9; S. Rey, EM-8	Visit Environmental Restoration, EM-13, Interview: R. Vocke, Manager, T. Gunderson, EM Division Leader Visit Environmental Chemistry EM-9; Interview: C. Leasure, Manager	Interview at Materials Management (MAT), E. Trujillo, D. Bryson	Interview: J. Wetten, M. Stevenson, Energy and Technical Direct. Managers; J. Jackson, LANL Deputy Director	Travel

ENVIRONMENTAL SUBTEAM DAILY AGENDA

WEEK 2 9/30-10/5/91		Monday, 9/30	Tuesday, 10/1	Wednesday, 10/2	Thursday, 10/3	Friday, 10/4	Saturday, 10/5
Radiation D. Allard	**AM**	Examine wells outfalls in Mortandad, Pueblo Bayo, Acid Canyons; Review records; Interview: area env. rad. protection personnel (Coordinate with Groundwater Specialist)	Examine TA-53, LAMPF Review records; interview - area env. rad. protection personnel	Examine TA-48 Radiochem Site Review records; Interview - area env. rad. protection personnel	Examine TA-54 Waste Disposal Site (Bldgs., 33, 38, 48, 49, and Area G) Review records; interview - area env. rad. prot. personnel	Offsite	
	PM	Examine TA-50 liquid waste plant analytical laboratory Review records; Interview - area env. rad. protection personnel	Examine TA-53 LAMPF Holding Ponds Review records; Interview - area env. rad. protection personnel	Examine TA-49 subsurface test site Review records; Interview - area env. rad. protection personnel	Review records; Interview: C. Soden, AL	Offsite	
M. Lees	**AM**	TA-50 Liquids Bldg. L, 69 Interviews: J. Buckholz, liquid processing, SOPs, training, monitoring/surveys	TA-55, PF-4; Interviews: Rad Waste Storage, Evaporator Operator, Incinerator Operation, Waste Disposal	Tour: TA-21 liquid processing, SOPs, training, radwaste	Tour: TA-3 CMR, Waste management procedures; TA-54, Area G, shaft disposal evolution, Area G, burial waste evolution	TA-3, CMR, continued	Travel
	PM	TA-50 (Continued) Review records Waste incinerator	TA-54, Bldgs., 11 and 82 Areas G; Interview: J. Harper, A. Gustevson, Waste Management Plan, TRU Cert. Plan, perf. assessments, closure plans, waste compacting, SOPs, training, mixed waste procedures; observe evolution - waste compacting	Review records Documentation and decommissions (D&D) -Procedures -Records -Site visit	Interview: AL; Tour: TA-54, Area 2; Area L, tour, interview with Section Leader, A. Gustevson	LAMPF, Review records; tour of 2 radwaste sites; D&D, TA-50 - rad waste procedures interview	
Inactive Waste Sites P. Feuerbach	**AM**	Interview and site examination with M. Devaurs (Operable Unit Project Manager) Investigating TA-21	Interview and site examination, B. Gilchrist, A. Barr, Investigating TA-51, TA-54	Interview and site evaluation with G. Eller and H. Knopp (Operable Unit Project Manager) Investigating TA-49	Interview and site examination with K. Dowler (Operable Unit Project Manager) Investigating TA-33, TA-70	Interview and site examination with A. Pratt (Operable Unit Project Manager) Investigating TA-4, TA-5, TA-35, TA-42, TA-48, TA-52, TA-55, TA-66	Leave Santa Fe

ENVIRONMENTAL SUBTEAM DAILY AGENDA

WEEK 2 9/30-10/5/91		Monday, 9/30	Tuesday, 10/1	Wednesday, 10/2	Thursday, 10/3	Friday, 10/4	Saturday, 10/5
	PM	Interview: T. Buhl, Sampling Supervisor; Witness sampling	Interview: P. Gautier, EM-9	Review EM-13, QA Program	Interview Mason-Hanger for environmental concerns, A. Jones, J. Russell	Interview: E. Werka, Chemical and Materials Dir. Manager; R. Phillips, training office	Travel
Radiation P. Jones	AM	Ambient air sample changeout Interview: L. Hoffman, T. Buhl, S. Lester	Tour CMR Effluent sampling and analysis Interview: A. Cuchiarra, R. Scripsick, C. Buckland, J. Phillips, W. Wadman, R. Romero, S. Fong	Tour TA-2, Omega Reactor; effluent sampling and analysis; Interviews: B. Bowen, W. Olsen, R. Morgan, D. Hull Site Meteorological Monitoring	Interview: B. Bowen, R. Larson, G. Stone, W. Olsen Site Meteorological Monitoring	Interview: B. Bowen, W. Olsen Tour meteorological monitoring stations	Leave Santa Fe
	PM	Document review Interview: L. Andrew Stack Effluent Monitoring	Interview: S. Church, W. Martinez re: calibration of stack monitors Document review	Environmental TLD exchange Interview: D. Van Etten, K. Jacobson	Interview: C. Soden, DOE-AL Document review	Tour TA-59, Area G, diffuse air sources; Interview: T. Buhl, J. Harper, E. Derr, R. Murphy, document review	

ENVIRONMENTAL SUBTEAM DAILY AGENDA

WEEK 2 9/30-10/5/91		Monday, 9/30	Tuesday, 10/1	Wednesday, 10/2	Thursday, 10/3	Friday, 10/4	Saturday, 10/5
	PM	Interview and site examination with M. Devaurs (Operable Unit Project Manager) Investigating TA-21	Interview and site examination, B. Gilchrist, A. Barr, Investigating TA-51, TA-54	Interview and site evaluation with G. Eller and H. Knopp (Operable Unit Project Manager) Investigating TA-49	Interview and site examination with K. Dowler (Operable Unit Project Manager) Investigating TA-33, TA-70	Interview and site examination with A. Pratt (Operable Unit Project Manager) Investigating TA-4, TA-5, TA-35, TA-42, TA-48, TA-52, TA-55, TA-66	
M. Heuberger	AM	Western Townsite sampling with S. Wagner, S. Fresquez	Interview and tour of operable units S. Wagner (HS-13) IT Corporation TA-10, TA-31, TA-32, TA-45	Interview and tour of operable units S. Wagner (HS-13) IT Corporation Offsite Operable Units	Interview and tour of operable units T. Hakonson (ESS-15) TA-50, TA-39	Inspect canyons	Leave Santa Fe
	PM	Interview and tour of operable unit areas with R. Conrad (Operable Unit Project Manager) TA-1	Interview and tour of operable units S. Wagner (HS-13) IT Corporation TA-10, TA-31, TA-32, TA-45	Interview/tour of operable units S. Wagner (HS-13) Offsite Operable Units	Interview/tour of operable units T. Hakonson (ESS-15) TA-50, TA-39	Inspect canyons	

ENVIRONMENTAL SUBTEAM DAILY AGENDA

WEEK 2 9/30-10/5/91	Monday, 9/30	Tuesday, 10/1	Wednesday, 10/2	Thursday, 10/3	Friday, 10/4	Saturday, 10/5
NEPA **AM** J. Pulliam **PM**	Draft findings	Revise findings; Interview: D. Garvey, T. Foxx, EM-8	Draft findings to Environment Subteam Leader	Findings to LANL staff and DOE staff	"NEPA Closeout," verification meeting: Environment Subteam Leader; NEPA Team; LANL staff; DOE staff; revise findings	
S. Simpson **AM** G. Eddlemon **PM** W. Schramm C. Trettin M. Peters B. Kemp	Draft Findings	Revise Findings	Draft findings to Environment Subteam Leader	Findings to LANL staff and DOE staff	"NEPA Closeout," verification meeting: Environmental Subteam Leader; NEPA Team; LANL staff; DOE staff; revise findings	

ENVIRONMENTAL SUBTEAM DAILY AGENDA

WEEK 3 10/14-19/91		Monday, 10/14	Tuesday, 10/15	Wednesday, 10/16	Thursday, 10/17	Friday, 10/18	Saturday, 10/19
Air T. Eckle	**AM**	L. Andrews - radiological air program discussion: programs and procedures, source inventories, new source reviews, effluent controls and evaluation, effluent monitoring, NESHAP, Subpart H, regulatory/order awareness	Facility observations and interviews: TA-53 Meson Physics, MPF-3 LAMPF; TA-2 Omega Site, Omega-1 Main Bldg., Omega-4 Lab Bldg.; TA-41 W Site, W-1 Vault, W-4 Lab Bldg., 41-47 Exhaust Stack	Facility observation and interviews TA-3 South Mesa, SM-29 CMR Lab, SM-66 Sigma Bldg.	Facility observation and interviews TA-16-205 WETF, TA-33 HP-Site, HP-86 Lab Bldg.	Facility observation and interviews TA-55 Plutonium Facility, PF-4 Plutonium Bldg., HEPA filter test demonstration	Document review
	PM	Documents review	TA-40 firing sites, gas gun	Discuss stack effluent flow rate measurement protocol	TA-21-209 Hi temp chem, hotline call followup	Document review; findings development	Document review
Surface Water/ Drinking Water R. Voeller	**AM**	8:00-10:00 N. Williams, EM-8; B. Kopp, EM-7; T. Glasco, JCI 10;00-12:00 B. Radzinski, ENG-6; T. Brunton, ENG-5; R. Bohn, EM-8	Los Alamos and Sandia canyon tours	TA-3, power plant, TA-16 steam plant inspection tours	TA-3 asphalt plant, TA-22 inspections	TA-18 inspection	Document review
	PM	1:00-2:15 L. Byers, ENG; D. Sneebsy, ENG-8; 2:15-3:30 D. Sneesby, ENG-8	Technical area tours TA-2 Omega West	Interviews: T. Gunderson, K Hargis, T. Buhl	TA-15 inspection	Document review; environmental surveillance	Document review

ENVIRONMENTAL SUBTEAM DAILY AGENDA

WEEK 3 10/14-19/91		Monday, 10/14	Tuesday, 10/15	Wednesday, 10/16	Thursday, 10/17	Friday, 10/18	Saturday, 10/19
Surface Water/ Drinking Water J. Fichera	AM	Inspect SDWA records and procedures with N. Williams, septic system records and procedures with S. Rae	Inspect JCI tank farm, motor pool, heavy equipment shop, TA-3-550 oil tanks, TA-3 mechanical and electronics support shops, TA-60 rack assembly and alignment complex, sigma mesa leaking transformers, tipped over Marx oil tanks	Interview: JCI/ENV re: SPCC procedures	Interview: E. Hoth, ENG-6 re: secondary containment design and engineering; drain discharge identification	Document review; Findings development; Phone interview with state regulators	Findings development; Document review
	PM	SPCC records and procedures with M. Alexander	Inspect JCI tank farm, motor pool, heavy equipment shop, TA-3-550 oil tanks, TA-3 mechanical and electronics support shops, TA-60 rack assembly and alignment complex, sigma mesa leaking transformers, tipped over Marx oil tanks	Interview: JCI/utilities, maintenance of water/sewer/storm lines, etc; Interview: JCI TA-3, Steam Plant Supervisor, R. Montayo and Spill Coordinator, J. Ortiz, re: SPCC/ASTs	Phone interview with state regulators; Document review	Document review; Findings development; phone interview with state regulators	Findings development; Document review
Groundwater/Soils J. Rea	AM	Document review; Draft findings	San Ildefonzo Indian Land; Overview, presented by several tribal members re: groundwater, soil, biota issues	Interview: M. Devaurs, TA-21, D. Morgan NMED, groundwater, J. Ward, Staff Engineer, NMWQCC	Observe sediment sampling event and shallow perched, M Maes, A. Stoker, S. McLin, E. Koenig	Interview: S. Slaton, LAAO; N. Becker, T. Gunderson	Findings development; document review
	PM	Interview: A. Barr TA-54, S. Rae, followup on groundwater issues, W. McDonald NM-KAO-Sandia	Document review; Draft findings; Followup with S. Ildefonzo Indian issues	Interview geophysicists, B. Laughlin, EES-1, J. Grader, EES-1. S. Goff, EES-1, re: sitewide facility systems	Groundwater sampling event	Interview: K. Hargis, Potrillo Canyon, neutron probe inspection	Findings development
Waste Management C. Summers	AM	8:00 Interview: A. Gustavsson, A. Drypolcher	Interview: with S. Moore-Mayne of BEC; TA-54 Area L Inspection Records Review	TA-50 operations, interview J. Buchholz	Tour EG&G facility; follow on discussion with A. Gustavsson and S. Moore-Mayne re: the compliance task force documentation	TA-35, TSD issues	Document review
	PM	Review SWMU, TA-50, TA-54 documentation	TA-54, Area L, SWMUs	TA-50 SWMUs; Interviews with M. Romero, S. Zygmunt, L. Christensen, S. Gonzales	Address TSD issues at TA-9 and TA-33	Discussion with A. Gustavsson and K. Lyncoln (BEC)	Document review

ENVIRONMENTAL SUBTEAM DAILY AGENDA

WEEK 3 10/14-19/91		Monday, 10/14	Tuesday, 10/15	Wednesday, 10/16	Thursday, 10/17	Friday, 10/18	Saturday, 10/19
Waste Management T. Collins	AM	Interview: J. Carmichael and D. McInroy, EM-8	Interview: A. Barr, classified waste management	Tour SAAs and TAAs JCI at TA-3 and TA-60	Interview: T. Gunderson on EM management system	Interview: J. Dewart, J. Corpion, EM-8 Classified Waste	Document review
	PM	Continued	Tour TA-16	Interview: A. Montoya, hazardous waste operations, training and verification process for waste characterization	Findings development	Findings development	Document review
R. D'Ermilio	AM	Document review	Document review	Inspect Omega Reactor, Sigma 66; salvage yard, mixed waste accumulation	Interview: J. White, K. Hargas, T. Grieggs; Document review; Findings development	Sigma 66, inspect plating operations cradle to grave waste generation and management; Interview: A. Gustavsson, TA-54, mixed waste storage	Document review; Findings development; WM team meeting
	PM	1:00 Followup interview J. Corpion, mixed waste permit and waste monitoring TA-53; Generator training; Waste moratorium/Fenton Hill site	Document review; Organize notes	Inspect vehicle maintenance shops/ JCI	Document review; Findings development	Summarize preliminary findings; Document review; Findings development	Document review; Findings development; may inspect TA-36 cylinder detonation area
Toxic and Chemical Materials C. Banzer	AM	Interview: M. Brown, JCI, T. Monaghan, M. Alexander, R. Gonzales, re: pesticide program	Interview: M. L'Esperanco, L. Sanchez, JCI pesticide program; tour pesticide storage area; Interview: T. Foxx, Biological Resource Committee	Interview: T. Monahagan, JCI, pesticide disposal; L. Soholt, pesticide oversight committee; Document review, re: experimental pesticides	Interview: R. Ferenbaugh re: experimental use of growth regulation (FIFRA); Findings development	Findings development	Document review
	PM	Interview: M. Alexander re: PCB spill document review	Interview: A. Gustavsson, pesticides disposal; D. Foxx, pesticide policy administration	Interview: JCI, T.C. Brown, R. Marines, W. Bustos re: Algicide use cooling towers	Findings development	Findings development	Document review
Toxic and Chemical Materials S. Young	AM	Interview: EM-8, HS-5, re: recordkeeping, training/SOPs, reporting, inventory; re: asbestos abatement activities NESHAPS	Interview: ENG-5, and JCI, Asbestos Program,	Tour TA-54 ACM storage/disposal and review data base	Tour TA-9, asbestos management	Followup interview with HS-5 and EM-8	Document review

ENVIRONMENTAL SUBTEAM DAILY AGENDA

WEEK 3 10/14-19/91		Monday, 10/14	Tuesday, 10/15	Wednesday, 10/16	Thursday, 10/17	Friday, 10/18	Saturday, 10/19
	PM	Continued	Tour ACM storage/ disposal TA-54 Asbestos disposal	Tour TA-21, asbestos management	Review asbestos survey data with JCI	Followup field work	Findings development
Quality Assurance J. Melloni	AM	Review of EM-7 Group QA program development and implementation; interview R. Romero, Chairman EM Division Quality Management Committee and EM-7 Quality Coordinator	Review of waste management records storage EM-7	Review software verification, EM-7	Review of software verification EM-9; Review procedure controls EM-7	Review qualification of offsite analysis laboratory EM-9	Document review; Findings development
	PM	Review of EM Division QA program development and implementation plan; Interview: R. Romero continued	Review of EM-7 technical support section, Continue review of EM division QA program	Review of procurement controls, EM-13	Review of software verification EM-8; Review procedure controls EM-8	Attended laboratory QA technical accuracy review	Document review; Findings development
H. Rivera	AM	Interview; Document review; Followup and findings development	Interview; Document review; Followup and finding development	Interview; Document review; Followup and finding development	Interview; Document review; Followup and finding development	Interview; Document review; Followup and finding development	Finalize findings
	PM	Interview; Document review; Followup and finding development	Interview; Document review; Followup and finding development	Interview; Document review; Followup and finding development	Interview; Document review; Followup and finding development	Technical accuracy review	Finalize findings
P. Pifalo	AM	Review quality practices EM-13	Interview: D. Pippin, Eng. Div. QA	Interview: J. Emmele, Nuclear Weapons Dir.	Review Yucca Mountain Environmental QA	Document review; Phone revisits	Findings development
	PM	Review documents	Interview: F. Morris, A.D. research; J. Browne A.D. defense research and application directorate	Review QA oversight function	Review sitewide quality control procedures and material handling and control	Findings Development; Phone revisits	Continued

ENVIRONMENTAL SUBTEAM DAILY AGENDA

WEEK 3 10/14-19/91		Monday, 10/14	Tuesday, 10/15	Wednesday, 10/16	Thursday, 10/17	Friday, 10/18	Saturday, 10/19
Radiation P. Jones	AM	Document review	Interview: L. Hoffman re: ambient air sampling	Interview: P. Fresquez, preoperational monitoring	Interview: D. Van Etten, T. Buhl, Environmental TLDs	Tour TA-8; radiological dose assessment; Interview: T. Buhl, T. Gonzales, T. Feiertag	Document review, Findings development
	PM	Interview: T. Buhl, radiological dose assessment; Document review	Interview: T. Buhl, radiological dose assessment; Document review; Findings development	Interview: M. Howe, E. MacBain, Emergency Preparedness; Document review; Findings development	Hotline interview; Document review; Findings development	Tour TA-52; Document review; Findings development; Interview: J. Elder, T. Knight, K. Tapia, H. Sullivan, A. Neul	Document review, Findings development
D. Allard	AM	Interview: T. Buhl re: environmental surveillance (soil, veg., dose models, etc.)	Examine TA-14, Q Site (firing range), TA-15 R Site (firing range); Review records; Interview: area env. rad. protection personnel	Examine TA-3, South Mesa Site (Bldg. 29); Review records; Interview: area env. rad. protection personnel; Also P. Fresquez re: food stuffs	Examine TA-36 Kappa Site firing ranges; Review records; Interview: area env. rad. protection personnel	Interview: area env. rad. protection personnel: N. Becker re: OU firing ranges; G. Brooks re: radiochemistry procedures	Review records; Findings development
	PM	Document review	Examine TA-21, DP Site liquid rad waste treatment plant; Review records; Interview: area env. rad protection personnel	Examine TA-18, Pajarito Laboratory; Records review; Interview: rad protection personnel	Examine TA-35 Ten Site (Bldg. 2, Area W, SM213); Review records; Interview: area env. rad. protection personnel	Examine TA-33, HP site, Bldg. 86, Area E, firing range; Review records; Interview: area environmental rad protection personnel	Review records; Findings development
M. Lees	AM	10:30 Interview: C. Sohn, Nuclear Material Section Leader TA-54, PF-4	TSTA, radwaste, training, SOPs; TA-21, tour, rad liquid waste processing facility	Interviews: J. Harper, EM-7, B. Reich, EM-7, DOE-ALO	Review records; Findings development	TA-18 Nuclear Safety Site, mixed waste procedures; Sitewide D&D issues	Record review; Findings development
	PM	1:30 Interview: T. Drypolcher, EH-7 Group Leader, at TA-50	Decontamination and documentation plan, Section 5, DOE Order 5820.2A	Continued	D&D, sitewide issues	Facility issues re: waste management, EMG-2; D&D issues, HS-3	Continued
Inactive Waste Sites P. Feuerbach	AM	Interview: S. Slaten of LAAO	Interview: C. Armijo: LANL Community Relations	Interview: J. Carmichael, and D. McInroy, Inactive USTs	Interview: J. Carmichael and D. McInroy, Inactive USTs; T. Foxx, D. Garvey, K. Bennett, Natural Resources	Interview: B. Vocke, L. Schott, S. Wagner, ER issues	Document review
	PM	Document Review	Interview: D. York, ER MIS manager	Interview: M. Brown, JCI environmental manager	Regulation review	R. Sena, AL	Document review
Inactive Waste Sites M. Heuberger	AM	Resume onsite work; Interview: at 10:00 S. Slaten Document review	Interview: S. Rae, EM-8, B. Gallahers, EM-8	Interview: T. Buhl, EM-8, T. Alexander, M-DO	A. Elliot, E. McBain, EMO, G. Montoya, EM-7	Followup interviews	Document review

ENVIRONMENTAL SUBTEAM DAILY AGENDA

WEEK 3 10/14-19/91	Monday, 10/14	Tuesday, 10/15	Wednesday, 10/16	Thursday, 10/17	Friday, 10/18	Saturday, 10/19
PM	Document review	D. McInroy, EM-8	D. Brooks, A-1	P. Fresquez, EM-8	Findings development	Document review

ENVIRONMENTAL SUBTEAM DAILY AGENDA

WEEK 4 10/21-26/91		Monday, 10/21	Tuesday, 10/22	Wednesday, 10/23	Thursday, 10/24	Friday, 10/25	Saturday, 10/26
Air T. Eckle	AM	Document review; Followup visits; Draft findings	Document review; Followup visits; Draft findings	Document review; Followup visits; Draft findings	Document review; Followup visits; Draft findings	Technical Accuracy Review	
	PM	Document review; Followup visits; Draft findings	Document review; Followup visits; Draft findings	Document review; Followup visits; Draft findings	Document review; Followup visits; Draft findings		
Surface Water/ Drinking Water R. Voeller	AM	Followup findings development	Followup findings development	Followup findings development	Followup findings development	Followup findings development Leave LANL at noon	
	PM	Followup findings development	Followup findings development	Followup findings development	Followup findings development		
J. Fichera	AM	Inspect TA-55 plutonium facility; Records review re: septic systems	Document review; Followup and findings development	Document review; Followup and findings development	Document review; Followup and findings development	Document review; Followup and findings development	
	PM	Document review; Followup and findings development	Document review; Followup and findings development	Document review; Followup and findings development	Document review; Followup and findings development	Leave LANL at noon	
Groundwater/Soils J. Rea	AM	Document review; Followup and findings development; Followup interviews	Document review; Followup and findings development; Followup interviews	Document review; Followup and findings development; Followup interviews	Document review; Followup and findings development; Followup interviews	Leave LANL at noon	
	PM	Document review; Followup and findings development; Followup interviews	Document review; Followup and findings development; Followup interviews	Document review; Followup and findings development; Followup interviews	Document review; Followup and findings development; Followup interviews		
Waste Management C. Summers	AM	Document cradle-to-grave management of wastes sent to TA-50; Interview S. Rea	Interview; Document review; Followup and findings development	Interview; Document review; Followup and findings development	Interview; Document review; Followup and findings development	Leave LANL at noon	
	PM	Visit TA-48 for potential TSD issues	Interview; Document review; Followup and findings development	Interview; Document review; Followup and findings development	Interview; Document review; Followup and findings development		
T. Collins	AM	Interview; Document review; Followup and findings development	Interview T. Gunderson; Document review; Followup and findings development	Interview T. Drypolcher; Document review; Followup and findings development	Interview; Document review; Followup and findings development	Leave LANL at noon	
	PM	Interview; Document review; Followup and findings development	Interview; Document review; Followup and findings development	Interview; Document review; Followup and findings development	Interview; Document review; Followup and findings development		

ENVIRONMENTAL SUBTEAM DAILY AGENDA

WEEK 4 10/21-26/91		Monday, 10/21	Tuesday, 10/22	Wednesday, 10/23	Thursday, 10/24	Friday, 10/25	Saturday, 10/26
Waste Management R. D'Ermilio	AM	Interview; Document review; Followup and findings development	Interview; Document review; Followup and findings development; Inspect TA-54 mixed waste storage; Inspect medical facility medical waste management and disposal	Interview; Document review; Followup and findings development	Interview; Document review; Followup and findings development	Leave LANL at noon	
	PM	Interview; Document review; Followup and findings development	Interview; Document review; Followup and findings development	Interview; Document review; Followup and findings development	Interview; Document review; Followup and findings development		
Toxic and Chemical Materials C. Banzer	AM	Findings development	Findings development	Findings development	Findings development	Leave LANL at noon	
	PM	Findings development	Findings development	Findings development	Findings development		
S. Young	AM	Findings development	Findings development	Findings development	Findings development	Leave LANL at noon	
	PM	Interview S. Fong, J. Ryan, S. Slayton LAAO	Findings development	Findings development	Findings development		
Radiation P. Jones	AM	Interview; T. Buhl; Document review; Followup and findings development	Document review; Followup and findings development	Document review; Followup and findings development	Document review; Followup and findings development	Leave LANL at noon	
	PM	Document review; Followup and findings development	Document review; Followup and findings development	Document review; Followup and findings development	Document review; Followup and findings development		
D. Allard	AM	TA-50, interview operating personnel; Document review; Followup and findings development	Examine INS Laundry (Santa Fe); Interview operating personnel; Document review; Examine effluents	Phone interview; Document review; Followup and findings development	Phone interview; Document review; Followup and findings development	Leave LANL at noon	
	PM	Phone interview; Document review; Followup and findings development	Phone interview; Document review; Followup and findings development	Phone interview; Document review; Followup and findings development	Phone interview; Document review; Followup and findings development		
M. Lees	AM	Visit LAMPF Boneyard and Followup; Findings development	Phone interview; Document review; Followup and findings development	Phone interview; Document review; Followup and findings development	Phone interview; Document review; Followup and findings development	Leave LANL at noon	
	PM	Phone interview; Document review; Followup and findings development	Phone interview; Document review; Followup and findings development	Phone interview; Document review; Followup and findings development	Phone interview; Document review; Followup and findings development		

ENVIRONMENTAL SUBTEAM DAILY AGENDA

WEEK 4 10/21-26/91		Monday, 10/21	Tuesday, 10/22	Wednesday, 10/23	Thursday, 10/24	Friday, 10/25	Saturday, 10/26
Quality Assurance J. Melloni	AM	Document review; Followup and findings development	Document review; Followup and findings development	Document review; Followup and findings development	Document review; Followup and findings development	Leave LANL at noon	
	PM	Document review; Followup and findings development	Document review; Followup and findings development	Document review; Followup and findings development	Document review; Followup and findings development		
P. Pifalo	AM	Document review; Followup and findings development	Document review; Followup and findings development	Document review; Followup and findings development	Document review; Followup and findings development	Leave LANL at noon	
	PM	Document review; Followup and findings development	Document review; Followup and findings development	Document review; Followup and findings development	Document review; Followup and findings development		
Inactive Waste Sites P. Feuerbach	AM	Interview S. McLin, Characterization of Surface Impoundments; Document review; Findings development	Document review; Findings development	Document review; Findings development	Document review; Findings development	Leave LANL at noon	
	PM	Interview; Document review; Followup and findings development	Interview; Document review; Followup and findings development	Interview; Document review; Followup and findings development	Interview; Document review; Followup and findings development		
M. Heuberger	AM	Document review; Followup and findings development	Document review; Followup and findings development	Document review; Followup and findings development	Document review; Followup and findings development	Leave LANL at noon	
	PM	Document review; Followup and findings development	Document review; Followup and findings development	Document review; Followup and findings development	Document review; Followup and findings development		

ENVIRONMENTAL SUBTEAM DAILY AGENDA

WEEK 5 10/28-11/2/91		Monday, 10/28	Tuesday, 10/29	Wednesday, 10/30	Thursday, 10/31	Friday, 11/1	Saturday, 11/2
Air T. Eckle	AM	Review Findings	Draft Overview	Review Findings	Review Findings	Finalize findings	Finalize findings
	PM	Review Findings	Draft Overview	Review Findings	Review Findings	Finalize findings	Finalize findings
Surface Water/ Drinking Water R. Voeller	AM	Travel	Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	Finalize findings
	PM	Travel	Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	Finalize findings
J. Fichera	AM		Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	Finalize findings
	PM	Travel	Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	Finalize findings
Groundwater/Soils J. Rea	AM		Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	Finalize findings
	PM	Travel	Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	Finalize findings
Waste Management C. Summers	AM		Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	Finalize findings
	PM	Travel	Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	Finalize findings
T. Collins	AM		Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	Finalize findings
	PM	Travel	Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	Finalize findings
R. D'Ermilo	AM		Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	Finalize findings
	PM	Travel	Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	Finalize findings
Toxic and Chemical Materials C. Banzer	AM		Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	Finalize findings
	PM	Travel	Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	Finalize findings

ENVIRONMENTAL SUBTEAM DAILY AGENDA

WEEK 5 10/28-11/2/91		Monday, 10/28	Tuesday, 10/29	Wednesday, 10/30	Thursday, 10/31	Friday, 11/1	Saturday, 11/2
Toxic and Chemical Materials S. Young	AM		Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	Finalize findings
	PM	Travel	Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	Finalize findings
Quality Assurance J. Melloni	AM		Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	Finalize findings
	PM	Travel	Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	Finalize findings
Radiation P. Jones	AM		Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	Finalize findings
	PM	Travel	Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	Finalize findings
D. Allard	AM		Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	
	PM	Travel	Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	
M. Lees	AM		Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	
	PM	Travel	Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	
Inactive Waste Sites P. Feuerbach	AM		Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	Finalize findings
	PM	Travel	Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	Finalize findings
M. Heuberger	AM		Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	Finalize findings
	PM	Travel	Technical accuracy review	Technical accuracy review	Technical accuracy review	Finalize findings	Finalize findings

ENVIRONMENTAL SUBTEAM DAILY AGENDA

WEEK 6 11/4-11/91		Monday, 11/4	Tuesday, 11/5	Wednesday, 11/6	Thursday, 11/7	Friday, 11/8	Saturday, 11/9
Air T. Eckle	AM	Review findings	Review findings	Review findings	Travel Day	Closeout	
	PM	Review findings	Review findings	Review findings			
Groundwater/Soils J. Rea	AM	Finalize findings	Finalize findings	Finalize findings	Travel Day	Closeout	
	PM	Finalize findings	Finalize findings	Finalize findings			
Waste Management C. Summers	AM	Finalize findings	Finalize findings	Finalize findings	Travel Day	Closeout	
	PM	Finalize findings	Finalize findings	Finalize findings			
T. Collins	AM	Finalize findings	Finalize findings	Finalize findings	Travel Day	Closeout	
	PM	Finalize findings	Finalize findings	Finalize findings			
R. D'Ermilio	AM	Finalize findings	Finalize findings	Travel Day		Closeout	
	PM	Finalize findings	Finalize findings				
Toxic and Chemical Materials C. Banzer	AM	Finalize findings	Finalize findings	Finalize findings		Closeout	
	PM	Finalize findings	Finalize findings	Travel			
Radiation P. Jones	AM	Finalize findings	Finalize findings	Finalize findings	Travel Day	Closeout	
	PM	Finalize findings	Finalize findings	Finalize findings			
Quality Assurance J. Melloni	AM	Finalize findings	Finalize findings	Finalize findings	Travel Day	Closeout	
	PM	Finalize findings	Finalize findings	Finalize findings			
Inactive Waste Sites P. Feuerbach	AM	Finalize findings	Finalize findings	Travel Day		Closeout	
	PM	Finalize findings	Finalize findings				
M. Heuberger	AM	Finalize findings	Finalize findings	Travel Day		Closeout	
	PM	Finalize findings	Finalize findings				

APPENDIX D

ENVIRONMENT AND MANAGEMENT SUBTEAMS CONTACTS/INTERVIEWS

(Appendix D is available on microfiche.)

APPENDIX E

LIST OF DOCUMENTS REVIEWED BY THE ENVIRONMENT AND MANAGEMENT SUBTEAMS

(Appendix E is available on microfiche.)

APPENDIX F

OSHA NONCOMPLIANCE

(Appendix F is available on microfiche.)

APPENDIX G

TIGER TEAM HOT LINE CALLS AND RESPONSES

APPENDIX G
TIGER TEAM HOT LINE CALLS AND RESPONSES
LOS ALAMOS NATIONAL LABORATORY

An onsite environment, safety, and health (ES&H) hot line was established for the Los Alamos National Laboratory (LANL) assessment and operated by the Tiger Team between September 23 and October 25, 1991. The hot line was established to allow LANL personnel, as well as the general public, to report specific ES&H concerns. Notifications of the hot line and its purpose were made in local newspapers, at a press conference, and through site newsletters. In addition, notices were distributed to each LANL organizational entity. The notices also informed LANL employees that information related to fraud, waste, abuse, misconduct, and environmental issues of a criminal nature could be reported directly to the DOE Office of the Inspector General at (800) 541-1625, (202) 586-4073, or FTS 896-4073.

This appendix provides a synopsis of calls received on the hot line and the subsequent response actions taken by the Tiger Team. Calls were consolidated if the concerns identified were of a similar nature and if the response would be essentially identical.

CONTROL #1

DATE:	September 23, 1991
NATURE OF CONCERN:	Concern referenced the safe handling of Special Nuclear Materials by individuals who use illegal drugs and alcohol while maintaining a Q-clearance. Individual was aware of such an employee and was concerned for the safety of coworkers and the community.
RESPONSE:	Referred to the Safety and Health Subteam. LANL management and their Operational Security Division promptly investigated this concern and found that the allegations were unfounded. It should be noted that the Safety & Health Subteam reviewed the fitness-for-duty program at LANL, including substance abuse; their concerns are included in the Tiger Team report.

CONTROL #2

DATE: September 23, 1991

NATURE OF CONCERN: Caller asked for mail stop of Tiger Team.

RESPONSE: Caller was given requested information.

CONTROL #3 & #22

DATE: September 23 and 26, 1991

NATURE OF CONCERN: Caller expressed concern regarding the LANL ES&H hot line phone number and why there was no response when called. In addition, the caller wanted an interpretation of the word "environment" as it relates to the Director's Policy 104 and the operation of the Laboratory. The caller was interested if the meaning included aesthetic values, natural values, and historic values relevant to the heritage of New Mexico, etc.

RESPONSE: Referred to the Environmental Subteam who returned the calls and answered the caller's concerns. LANL examines operations and releases that affect or potentially affect public health and natural resources.

CONTROL #4, #5, & #6

DATE: September 24, 1991

NATURE OF CONCERN: Caller referenced newspaper article on the estimates of expected earthquake magnitudes. Concern is that LANL does not have earthquake-proof buildings.

RESPONSE: Referred to the Safety and Health Subteam. LANL is aware of the potential for significant seismic hazards and formed a team in August 1990 to investigate seismic hazards. The LANL team is reviewing building structures for seismic safety, studying past earthquakes, and conducting dynamic seismic analyses and evaluation. In conjunction with the Tiger Team review, a natural phenomena hazards team is evaluating the designated high-hazard facilities. In addition, the Tiger Team is also performing a general overview of the site and the plans and resources in place by the LANL team for seismic safety.

CONTROL #7

DATE:	September 24, 1991
NATURE OF CONCERN:	Caller was a former employee retired from LANL due to health problems. Concern related to PCBs or other hazardous material without proper vent hoods, as required.
RESPONSE:	Referred to the Safety and Health Subteam who visited this former employee's work site and found that the machines are not vented. The investigation into the employee's condition was thorough and cannot be validated or refuted by the Safety and Health Subteam. However, it was suggested that a thorough industrial hygiene survey be conducted of this operation, complete with sampling, exposure monitoring, ventilation review, skin exposure, protective equipment use, etc.

CONTROL #8

DATE:	September 24, 1991
NATURE OF CONCERN:	Unidentified caller expressed concern with the temporary power that was provided to a new building under construction (Building 510), specifically whether the power is up to code for a construction site.
RESPONSE:	Referred to the Safety and Health Subteam who inspected the site relative to temporary power concerns and found that the temporary power was on a Ground Fault Circuit Interrupter. There were no noncompliances noted related to the use of temporary power.

CONTROL #9

DATE:	September 24, 1991
NATURE OF CONCERN:	Caller was concerned about an individual who was injured while working in TA-53 with solvents and chemicals; in particular, the formaldehyde in the equipment testing laboratory.
RESPONSE:	Referred to the Safety and Health Subteam who talked with the caller regarding medical problems as a result of chemical exposures in the work place. LANL investigated the occupational exposures and restricted for exposure properly.

CONTROL #10

DATE:	September 24, 1991
NATURE OF CONCERN:	Caller was concerned regarding a newspaper article which discussed Sandia National Laboratories dumping radioactive water into the sewage system. Caller wanted to know if the Tiger Team would be looking at this same type of activity at LANL.
RESPONSE:	Referred to the Tiger Team Leader who returned the call and addressed the caller's concerns. The Environmental Subteam did review this area of concern as part of their scope.

CONTROL #11

DATE:	September 25, 1991
NATURE OF CONCERN:	Unidentified caller was concerned with the construction compliance of design drawings. Identified current situation as the engineers designing the projects but being removed from the inspection process. ENG-5 inspectors take over and control compliance of construction with the construction drawings. Concerned the inspectors are not demanding the compliance an engineer would require and could result in a safety issue. In addition, the engineers, at times, are not allowed on the construction site to verify the designs are built in accordance with the contract documents.
RESPONSE:	Referred to the Safety and Health Subteam whose investigation revealed that LANL has a variety of approaches with respect to designers following fabrication or construction. In following up where ENG-5 inspectors follow construction, no cases of safety issues due to lack of compliance with construction drawings were found.

CONTROL #12 & #13

DATE:	September 25, 1991
NATURE OF CONCERN:	Caller left phone number for previous call which referenced mail stop.
RESPONSE:	Follow-up completed; no further action required.

CONTROL #14

DATE: September 14, 1991

NATURE OF CONCERN: Caller inquired as to where an ES&H deficiency ticket should be sent.

RESPONSE: Information was provided to caller.

CONTROL #15

DATE: September 25, 1991

NATURE OF CONCERN: Caller was concerned that there is a smoking area in the cafeteria which is a hazard to one's health.

RESPONSE: Referred to the Safety and Health Subteam who spoke with caller and noted a concern regarding secondary smoke in cafeteria. Did check ventilation and maintenance plan for the building to see if inspections are being made. Discussions with cafeteria personnel found no immediate changes are planned.

CONTROL #16

DATE: September 25, 1991

NATURE OF CONCERN: Caller was inquiring as to the policy on releasing draft documents or privileged information in confidence to the Tiger Team.

RESPONSE: Information was provided to caller.

CONTROL #17 & #122

DATE: September 26, and October 23, 1991

NATURE OF CONCERN: Unidentified caller asked the Tiger Team to look at the MEC-1 Hazards Material Machine Shop; also had beryllium concern.

RESPONSE: Referred to the Safety and Health Subteam who noted that the potential exists at MEC for significant risk should proper controls and practices not be applied. Concerns in the Tiger Team report deal with the lack of hazard evaluation, monitoring, and medical surveillance. It was recommended that this matter be referred to DOE/LAAO for further investigation by an independent organization.

CONTROL #18

DATE:	September 26, 1991
NATURE OF CONCERN:	Unidentified caller was concerned with the lockout/tagout safety procedure as it related to hot panels. Individual believed there was confusion as to the guidance given and the current methodology of a "rubber-stamp system" which was being done by nonprofessionals in the craft. Concerned that the health, safety, and environmental requirements were not being addressed when hot panels are being worked. In addition, the individual raised concerns as to the number of electricians working on a job and believed that in all cases there should always be two journeymen electricians working together.
RESPONSE:	Referred to the Safety and Health Subteam who found the lockout/tagout program and its application is deficient in many aspects. The Tiger Team Report includes the areas of concern. Regarding working alone, AR 1-8 requires a second person to be in the area under certain hazardous conditions which includes "when a worker could fall to a lower level." Both the worker and manager should be reminded of this AR; it must be enforced.

CONTROL #19

DATE:	September 26, 1991
NATURE OF CONCERN:	Caller was concerned with the conduct/discussion a Tiger Team member had over the phone with an employee.
RESPONSE:	Referred to the Tiger Team Leader. Follow-up information was obtained, and the individual Tiger Team member was given guidance in order to ensure that no such situation which could be misinterpreted would recur.

CONTROL #20 & #21

DATE:	September 26, 1991
NATURE OF CONCERN:	Individual had concerns that spouse had been fired improperly. Caller also alluded to financial irregularities which could affect ES&H.
RESPONSE:	The first concern was referred to DOE/AL as it did not pertain to an ES&H matter. The second concern was referred to the Management Team who could not substantiate the allegation.

CONTROL #22 Reference Control #3

CONTROL #23

DATE: September 27, 1991

NATURE OF CONCERN: An unidentified caller was concerned with Station 303, entrance to guard station of the OS complex and the MEC division complex which appears to be unsafe.

RESPONSE: Referred to the Safety and Health Subteam who found this concern was too nonspecific to identify the exact problem. See Control Numbers 49 and 129 for similar concerns.

CONTROL #24

DATE: September 27, 1991

NATURE OF CONCERN: An unidentified caller was concerned with the availability of handicapped restrooms at LANL, specifically in the administration building where there are inadequate rails. Also concerned with the handicapped parking and the safety issues it raises by having to park in the street in certain areas.

RESPONSE: Referred to the Safety and Health Subteam and the Management Subteam. In summary, handicap facilities at SM-43 are minimal. Handicapped restrooms are not available in the administration building. However, LANL has an Accommodations Review Board who, if contacted by people needing handicapped facilities, will make every reasonable effort to make the required changes, notwithstanding budget constraints.

CONTROL #25

DATE: September 27, 1991

NATURE OF CONCERN: An unidentified caller was concerned with the plumes of smoke often seen coming up from the Los Alamos plateau and is interested in knowing what is being burnt in that area.

RESPONSE: Referred to the Environmental Subteam. The "plumes of smoke" may be from a variety of sources. Some of these may be: (1) Controlled burns of underbrush by the Forest Service in the National Forest to prevent major forest fires; (2) Open burns at LANL to dispose of waste high-explosives and explosives-contaminated materials, (3) Dust released as a consequence of test

firings at LANL, and (4) Dust released from the LANL asphalt plant if the plant is operated without water flow to the off-gas scrubber.

CONTROL #26

DATE: September 27, 1991

NATURE OF CONCERN: An unidentified caller expressed concern that LANL was reducing staff until after the Tiger Team left. Areas were specifically identified that were laying off people and would restaff once the Tiger Team left.

RESPONSE: Referred to the Management Subteam. The LANL Human Resources Division was asked for specific data on reductions in force (RIF). The information provided indicates that the majority of the CTR staff who were candidates for a RIF were placed elsewhere in the Laboratory. Our review of information did not substantiate the allegation of near-term reductions in force with any intention to recall individuals following the Tiger Team's departure.

CONTROL #27

DATE: September 27, 1991

NATURE OF CONCERN: An unidentified caller had a concern with a pipeline operation taking place on East Pajarito Road toward TA-55. Work is being performed by a continuous trencher; ditch is being entered right after the trenching is being done; and wanted to make sure all safety compliances are being met.

RESPONSE: Referred to the Safety and Health Subteam. The area was inspected and one noncompliance item related to confined space entry, 1926.651(g)(1)(i), was noted due to the trenching machine cutting into a manhole access. The trench was five feet deep. The soil was classified as "B" type. Shoring was not required.

CONTROL #28

DATE: September 27, 1991

NATURE OF CONCERN: Unidentified caller was concerned that the grievance committee at LANL that handles employee cases reports directly to line management, in this case HRD Division leader. Caller was concerned that if an employee had a safety concern, it would not be properly addressed due to fear of retaliation. Also, caller believed the

committee was ineffective since it does report to a line manager and not to the Regents of the University of California.

RESPONSE: Referred to the Management Subteam. The grievance process at LANL is described in AM111. The grievance process has two mechanisms to resolve disputes between two parties. Initially, the grievance review is conducted by the employee's division leader. If this is unsuccessful, a three-person grievance Hearing Panel is established; one panel member is selected by the grievant, one is selected by the respondent, and one is selected by the two chosen panelists. The panels findings are forwarded to the Director for formal determination. LANL is also introducing a pilot grievance procedure that should streamline the true elements associated with processing grievances. In view of the above, it is believed the caller's assertion is not well founded.

CONTROL #29

DATE: September 27, 1991

NATURE OF CONCERN: An unidentified caller, who is an employee of Mason & Hanger, expressed concern with the security force working 16- and 17-hour shifts and then being required to operate a motor vehicle. Concerned that safety regulations from the Department of Transportation are being violated.

RESPONSE: Referred to the Safety and Health Subteam who discussed the overtime issue with Mason & Hanger. It was noted that there is a substantial amount of overtime being worked. They ask for volunteers but need to hold people over if there are insufficient volunteers. Regarding the second issue of DOT regulations, the Safety and Health Subteam is not aware of any DOT restrictions on driver overtime.

CONTROL #30 & #31

DATE: September 30, 1991

NATURE OF CONCERN: Unidentified callers had concerns with the structured series policy that was put into effect in July and how it affected secretaries. Concern does not relate to Tiger Team responsibility.

RESPONSE: Referred to DOE/AL for information and/or action.

CONTROL #32

DATE: September 30, 1991

NATURE OF CONCERN: Unidentified caller had a concern about problems in the Fire Department, in particular, low morale and direction given by administration.

RESPONSE: Referred to the Safety and Health Subteam who, through conducting a number of interviews, found that morale is low as stated by the caller. Although the low morale issue has not been directly addressed in the Tiger Team report, many of the key issues which are a root cause of the low morale have been addressed.

CONTROL #33

DATE: September 30, 1991

NATURE OF CONCERN: Unidentified caller had concern about the procurement authority control system, in particular, vendor reviewing signatures to determine if they are appropriate prior to issuing hazardous materials.

RESPONSE: Referred to two Subteams.
(1) The Environmental Subteam ascertained that under current procurement authority control system, VWR confirms that purchasers have appropriate card of authority (authorization to purchase chemicals). VWR purchase records for an 8-week period were reviewed; identified 10 chemical purchases; and ascertained that all purchasers had card of authority for chemical purchases.
(2) The Safety and Health Subteam found that no system exists to ensure that personnel who pick up hazardous materials are trained and qualified to handle these materials. This is addressed in the Tiger Team report.

CONTROL #34

DATE: September 30, 1991

NATURE OF CONCERN: Unidentified caller expressed concern about the exercise that was held and the fact that security force cars were out on the road at least an hour before the exercise with lights flashing and not directing traffic away from the hazard scene which they would do in a real emergency.

RESPONSE: Referred to the Safety and Health Subteam who noted that during the exercise the security inspectors were told to simulate the road blocks and not to interfere with or cause traffic problems.

CONTROL #35 & #36

DATE:	September 30, 1991
NATURE OF CONCERN:	Caller expressed concern about a report that one of the Tiger Team members has a radar detector in their car. Concerned about the incorrect impression which might be given if people have radar detectors in the cars they are driving in the pursuit of Tiger Team business. Caller also mentioned that Tiger Team hot line number was not known by the LANL operator.
RESPONSE:	Referred to the Management Subteam who passed on information to all Subteams to cease use of any radar detectors. In response to second concern, requested LANL take action to ensure numbers are known by the LANL operator.

CONTROL #37

DATE:	October 1, 1991
NATURE OF CONCERN:	Unidentified caller wanted Tiger Team to address issue of lead in water pipes.
RESPONSE:	Referred to the Environmental Subteam. This issue is being addressed in Finding SW/CF-8, Drinking Water Program.

CONTROL #38

DATE:	October 1, 1991
NATURE OF CONCERN:	Individual wanted a return call.
RESPONSE:	The individual's call was returned; pertained to a personnel issue outside of the Tiger Team responsibility. The item was closed.

CONTROL #39

DATE:	October 1, 1991
NATURE OF CONCERN:	Individual wanted to set up meeting with Tiger Team.
RESPONSE:	The Environmental Subteam met with the caller. There are two findings that address the caller's concerns relating to (1) NESHAP for Radionuclides from DOE Facilities and (2) Rad. Air Effluent Monitoring Program.

CONTROL #40

DATE:	October 1, 1991
NATURE OF CONCERN:	Unidentified caller had comments on Q clearances and that they should be granted only if it is necessary and not as a matter of prestige.
RESPONSE:	Concern was beyond scope of Tiger Team and was referred to DOE/AL for information and/or action.

CONTROL #41

DATE:	October 1, 1991
NATURE OF CONCERN:	Individual wanted a return call.
RESPONSE:	Concern was with some specific salvaged material in caller's neighborhood which is no longer LANL property and is on private land of a business person in Los Alamos. Since this concern is beyond the scope of Tiger Team, resolution is being coordinated among caller, JCI Salvage Yard, and the New Mexico Environmental Protection Agency.

CONTROL #42

DATE:	October 1, 1991
NATURE OF CONCERN:	Unidentified caller expressed concern about appropriateness of a sign at a guard station.
RESPONSE:	Referred to the Safety and Health Subteam who visited the guard station and, although the caller may have misconstrued the words, could find nothing wrong with the sign posted which was: "No job is so important that it may be performed without due regard for safety and respect for the environment."

CONTROL #43

DATE:	October 1, 1991
NATURE OF CONCERN:	Unidentified caller had comment regarding senior managers' commitment to ES&H being unevenly reflected at the group level; employees not always sure what to do. Concern is reflected in the Tiger Team report.
RESPONSE:	Referred to the Tiger Team Leader for information only; no response required.

CONTROL #44

DATE: October 2, 1991

NATURE OF CONCERN: Former employee sent letter regarding hazardous conditions at TA-35 Bldg. #27 and exposure to chemicals and radiation and sensitivities to chemicals. Referred to a brain tumor investigation and articles in the NEW MEXICAN.

RESPONSE: Referred to the Safety and Health Subteam who visited this isolated test area. Noted that area is rarely used; however, if it is used, recommend that HS-3 and HS-5, in conjunction with line management, review the hazard. Application of AR 1-8, working alone may be in order.

CONTROL #45

DATE: October 2, 1991

NATURE OF CONCERN: When caller arrived at work, found their car leaking antifreeze and concerned about the leak onto the ground.

RESPONSE: Call was returned and caller was requested to call the LANL ES&H hot line to report this incident.

CONTROL #46

DATE: October 2, 1991

NATURE OF CONCERN: Individual wanted a return call regarding workers not being informed of the health hazards connected with beryllium exposure.

RESPONSE: Referred to the Safety and Health Subteam who visited the work area and found the supervisor and three of the shop workers all able to answer questions the Tiger Team asked concerning health risks and beryllium. A copy of their written program appears to be adequate. Copies of their air samples were requested.

CONTROL #47

DATE: October 2, 1991

NATURE OF CONCERN: Unidentified caller had concern about section leaders at LANL not being formally recognized as part of the management structure. Section leaders have first-line

manager responsibilities without the appropriate support, training, and salary compensation.

RESPONSE: Concern was beyond scope of Tiger Team and was referred to LANL for information.

CONTROL #48

DATE: October 2, 1991

NATURE OF CONCERN: Unidentified caller expressed concern about unsafe condition at TA-3 power plant. There are two exits, one into the power plant and another into the dispatch center. One leading into the dispatch center has been locked causing concern in the event of a fire.

RESPONSE: Referred to the Safety and Health Subteam who visited the facility and found the situation as described is correct and that this is a valid concern reflected in the Tiger Team report.

CONTROL #49 & #129

DATE: October 3 and 24, 1991

NATURE OF CONCERN: Unidentified callers expressed a safety concern about the road in front of OS and MEC compound; much traffic, hazardous situation where people are driving too fast, not paying attention to pedestrian crossing signs, and OS people driving around buildings.

RESPONSE: Referred to the Safety and Health Subteam who visited the area of concern and found that there are pedestrian crossing signs, white crossing lines for pedestrians, and speed limit is also posted in several areas. The county has jurisdiction for controlling the traffic.

CONTROL #50

DATE: October 3, 1991

NATURE OF CONCERN: Unidentified caller was concerned about evidence of mice in TA-3, SM-40, P-Division building and supply of food from Civil Defense days stored in basement. It was caller's understanding that rats have been observed in basement.

RESPONSE: Referred to the Safety and Health Subteam who noted that there are several areas where rodents have been a problem. LANL was requested to put SM-40 on the list for rodent eradication, and the Subteam will follow up

to see if action is taken. Employees can request this service by calling Dick Fox at 7-2827. However, LANL has no pest control program documentation that would communicate this information to the employees.

CONTROL #51

DATE: October 3, 1991

NATURE OF CONCERN: Unidentified caller has concern regarding environmental Laboratory analytical quality. The caller has received reports of samples done by EM-9 and CLS-1; validity of data is in question.

RESPONSE: Referred to the Environmental Subteam. Information received by caller was not sufficient to achieve a proper assessment of caller's concerns.

CONTROL #52

DATE: October 3, 1991

NATURE OF CONCERN: Unidentified caller was concerned about the DOE high-pressure gas line that runs through Los Alamos neighborhoods. Understand that it failed the wall test and concerned that line will continue in service while unsafe.

RESPONSE: Referred to the Safety and Health Subteam who performed an evaluation of the gas line that runs approximately three miles long and is operated by the Gas Company of New Mexico under a lease agreement with the owner, the U.S. Department of Energy.

Safety concerns were discussed with DOE/AL and DOE/LAAO regarding a section of the pipe, and it was agreed that: (1) section of pipe would not be placed in a "stand-down" condition until safety considerations are properly evaluated; (2) evaluation will be completed as soon as possible; (3) all parties, including the New Mexico State Corporation Commission (NMSCC) that regulates gas lines, have been informed of the situation. Preliminary investigation by the NMSCC indicates that they do not believe the line is unsafe to operate. This may change, however; and (4) other alternatives (like derating the pipe to a lower operating pressure) are being evaluated.

CONTROL #53

DATE: October 3, 1991

NATURE OF CONCERN: Unidentified caller would like to see written provision in ES&H regulations applying to a bomb

threat evacuation; there is one for earthquakes and fire but not for a bomb, particularly if it were an atomic radiation evacuation.

RESPONSE: Referred to the Safety and Health Subteam who determined that each facility has evacuation signs and instructions on how to effect an evacuation (whether for radiation, explosion, security incident, etc.).

CONTROL #54

DATE: October 3, 1991

NATURE OF CONCERN: Caller wanted Tiger Team to be aware of article in the October 3, 1991, edition of the NEW MEXICAN regarding ". . . why did LANL notify no one of a recent very large release, estimated at 2,800 curies?"

RESPONSE: No action required. Copy of the article was obtained for information.

CONTROL #55

DATE: October 4, 1991

NATURE OF CONCERN: Individual wanted a return call regarding assistance programs at LANL.

RESPONSE: Referred to the Management Subteam who noted that several individuals have brought to the Tiger Team's attention the issue of a reluctance to use the various employee counseling programs for fear that records may be accessible. This issue has been included in the Tiger Team report as a finding.

CONTROL #56 & #63

DATE: October 4 and 15, 1991

NATURE OF CONCERN: Unidentified callers were concerned that if it is supposed to be business as usual, why is Johnson Controls holding all work orders until after Tiger Team leaves, stopping all work on such things as ditches, confined spaces, etc., laying off 25 people, and expecting to have work done in same amount of time with 25 less people. Caller indicated hiring would occur to complete the work after the Tiger Team leaves.

RESPONSE: Referred to the Management Subteam who noted that Johnson Controls work backlog and layoffs closely follow historical patterns and, therefore, do not

support the allegation of the caller. Confined space and excavation work was halted due to Tiger Team Category I concern.

CONTROL #57

DATE: October 4, 1991

NATURE OF CONCERN: Individual wanted a return call regarding concerns related to TA-55:
(1) Control system is not safe;
(2) Maintenance of control system--spare parts are running out;
(3) Consequences to the safety of the facility if control system fails to operate due to defective, old components.

RESPONSE: Referred to the Safety and Health Subteam. In the mid-1980s, a replacement system was designed, prototyped, and partially installed. It was determined the replacement system would require more power than the existing UPS could supply. It also would have required additional cooling air. Upgrading the UPS and cooling systems was not considered desirable, so the replacement system was removed and the replacement project canceled.

CONTROL #58

DATE: October 4, 1991

NATURE OF CONCERN: Caller expressed two concerns: (1) 40-hour OSHA training for HAZMAT workers was provided under special arrangements with sole-source vendor with no competition; and (2) Soil samples are sent to a lab in Tennessee that is not EPA approved.

RESPONSE: Referred to the Management Subteam and Environmental Subteam. (1) Sole-source basis was documented and justified. (2) There is no requirement for EPA approval of analytical laboratories except as related to EPA's Safe Drinking Water program.

CONTROL #59

DATE: October 15, 1991

NATURE OF CONCERN: Individual wanted a return call.

RESPONSE: Call was returned; caller had a question, but had obtained answer elsewhere; no action required.

CONTROL #60 & #61

DATE: October 15, 1991

NATURE OF CONCERN: Unidentified callers expressed concern about the ventilation system at TA-59, OH1, which houses EM-9, EM-8, and HF-5. It shuts down periodically, no alarm systems, no backup generators, and people work for several days before they realize hoods are down. Caller expressed concerns regarding the make-up air and negative pressure in the building and the unbalanced hoods. Concerned chemicals are getting sucked back into building and that there is carbon monoxide buildup in the basement.

RESPONSE: Referred to the Safety and Health Subteam who found there has been a problem with the ventilation system at this facility. It is listed as a finding in the Tiger Team report.

CONTROL #62

DATE: October 15, 1991

NATURE OF CONCERN: Unidentified caller expressed concern about Radiation Safety Training in Group M-4; conducting examination without any people taking the test or given any radiation training at all.

RESPONSE: Referred to the Safety and Health Subteam who noted that approximately 100 technicians were given the opportunity on October 15-16 to test out of the rad. worker training. Process followed was normal LANL testing procedure.

CONTROL #63 Reference Control #56

CONTROL #64

DATE: October 15, 1991

NATURE OF CONCERN: Unidentified caller had two concerns: (1) Pay raises--raise allocation money is being used at every level starting with the Director on down so that when it gets to the group level there is no longer money for raises available. Bottom line is that the technical staff members on an average basis are not receiving their fair share of the annual salary increase allocation; salaries are not remaining competitive with the outside world; and (2) Nepotism is rampant throughout the Laboratory.

RESPONSE: Referred to the Management Subteam who noted that each Directorate has the same amount of money, in terms of the percentage increase, to distribute to Directorate staff each year; increases are distributed at the discretion of the Associate Director, Division Manager, and the Group Leaders consistent with rewarding superior performance. An external salary survey is also used as a basis for proposed salary increases, which must be approved by DOE/LAAO. A concern has been raised with this survey process as noted in a finding in the Tiger Team report.

CONTROL #65

DATE: October 15, 1991

NATURE OF CONCERN: Unidentified caller concerned with Halon 1211 fire extinguishers and a material safety data sheet that someone needs to look at.

RESPONSE: Referred to the Safety and Health Subteam who found that although there is extensive use of Halon extinguishers at LANL, there is no violation of the code or other noncompliance.

CONTROL #66

DATE: October 15, 1991

NATURE OF CONCERN: Caller had concerns regarding personnel records and scientific management accountability. Asked for a specific Tiger Team member to return the call.

RESPONSE: Referred to the Management Subteam. Several issues raised by this caller have been addressed as Management findings in the Tiger Team report concerning corporate oversight section and the performance appraisal process.

CONTROL #67

DATE: October 15, 1991

NATURE OF CONCERN: Unidentified caller expressed concern for: (1) general disregard of no-smoking rules in government vehicles and government buildings, and (2) violation of seat belt rule.

RESPONSE: Referred to the Management Subteam who found that: (1) problems persist that require additional clarification of policy by LANL who has decided to

reinforce their existing policy dated 6/21/88; also there are decals in automobiles indicating no-smoking policy in government vehicles; and (2) the Los Alamos Police Department is the enforcing mechanism and may cite people not wearing seat belts (front seat only); also there are decals in government vehicles indicating necessity of wearing a seat belt.

CONTROL #68

DATE: October 15, 1991

NATURE OF CONCERN: Unidentified caller noted:
(1) Dangerous situation at the Carcinogen Lab located at TA-3, Bldg. 29, room 4009 regarding filters in the FE-66 ventilation system leaking in excess of allowable criteria. No emission release measurements or duct work loading documented or investigated. Only radiation emissions are measured.

(2) In 400 area of TA-55 there is a hybrid situation because of large quantities of highly toxic gases; room air is recirculated to heat the air which does remove the gases.

(3) Large amount of asbestos released in December 1990 when a 50-year-old service station was demolished at 15th and Central in Los Alamos without any type of permits. Winds blew material over town site and Lab. Cleaned up by personnel in protective clothing and respirators after 8 months of exposing the public. Claimed DOE/LANL knew about this, but public and Lab employees never informed about hazards of exposure to a known carcinogen such as asbestos.

RESPONSE: Referred to the Safety and Health Subteam.
(1) A temporary filter housing was built a couple of years ago for this lab. The lab was going to be decontaminated and decommissioned and filters were disposed of. CLS-1 took over the lab and decided to recommission it as a carcinogen lab. System is reportedly not in use. CLS-1 is getting parts to recommission it. HS confirmed system is not on its active list.

(2) The TA-55 hazardous gases are addressed in the Tiger Team report.

(3) Uncontrolled removal of asbestos is a violation, but this was not on LANL property.

CONTROL #69

DATE: October 15, 1991

NATURE OF CONCERN: Unidentified caller expressed concern about an area east of PA-18 on Pajarito Road that says, "Danger Explosives Keep Out" with about a four-foot-tall barbed wire fence. If there are explosives, maybe there should be a bigger fence or clean up the area.

RESPONSE: Referred to Safety and Health Subteam who, as a result of investigation, noted several deficiencies on OSHA 1B forms.

CONTROL #70 & #71

DATE: October 15, 1991

NATURE OF CONCERN: Unidentified caller expressed concern regarding bicycle safety in regard to: (1) Metal storm grate openings on the roadways (West Hamon Road from where the bridge intersects for about half a mile--six storm grates; and Pajarito Road near TA-55) that can trap the bicycle wheel; and (2) Lack of accommodation of bikers who must cross Los Alamos Canyon Bridge going south in the morning and then make a left on East Jemez Road which is not safe or convenient.

In addition, caller cited guidebook from an organization (American Assn. of State Highway and Transportation Officials (AASHTO)) that roadways that have bicycle traffic should have lanes that are 14 feet wide. Said Tiger Team should apply same standards to bicycles that are being applied to rest of the Laboratory.

RESPONSE: Referred to the Safety and Health Subteam who noted the roadways listed in the concern are maintained by LANL. The gratings at all locations are not installed with regard to bicycle safety; openings are parallel with traffic flows; lane widths are inconsistent with guidelines in the AASHTO for bicycle safety.

CONTROL #72, #97, & #148

DATES: October 15, 18, and 26, 1991

NATURE OF CONCERN: Unidentified callers reported several concerns for LANL's substance abuse policies and also in the policies for an employee's right to a nonviolent work place.

Concern was expressed about drinking problems at work and people working with explosives while under the influence of alcohol. Problem was pursued through management and HRD, but nothing was ever done.

Concerned that managers are free to refuse and have refused to act on information provided them concerning drunkenness at work, drinking on the job, physical violence, and threats of physical violence brought by the drinking person against the employee who is reporting their drinking.

Reported specific names and incidents of people drunk at work and said there are videos and paperwork on this. Went on to say that grievance was filed with HRD, but told statute of limitations had run out. Did not understand how there could be a statute of limitations on drinking and safety.

Bottom line is that people who have been drinking have received no help. Speculated that in order to get promoted need a clean record so incidents go unreported.

Said that management's track record resulted in no action being taken for reporting drinking or drunkenness at work and no protection given to an individual who reports it. Asked for Tiger Team response to this in some form.

RESPONSE: Allegations of criminal acts were referred to DOE/IG for information and/or action. In addition, a meeting was held with the Deputy Director, LANL, who reviewed LANL's substance abuse policy. As a result, a letter of direction to management personnel was sent requesting adherence to the substance abuse policy.

CONTROL #73

DATE: October 15, 1991

NATURE OF CONCERN: Unidentified caller expressed concern about hiring of ES&H professionals. Laboratory policy to advertise those positions within EM or HS for internal candidates only. This results in musical chairs within the two divisions. If no one is found qualified, then they advertise externally, which delays the process.

RESPONSE: Referred to the Management Subteam who has identified the LANL recruiting process as a finding in the Tiger Team report.

CONTROL #74

DATE:	October 15, 1991
NATURE OF CONCERN:	Control #74 is a document received from a New Mexico resident which is a book review done on a document entitled "Environmental Surveillance at Los Alamos During 1987." Writer asks Tiger Team to look into the credibility of the surveillance documentation.
RESPONSE:	Referred to the Environmental Subteam for information; some of the valid points are addressed in the Tiger Team report.

CONTROL #75

DATE:	October 16, 1991
NATURE OF CONCERN:	Unidentified caller would like Tiger Team to look into nonenforcement of ES&H SOPs and punishment levied for violations, also nonenforcement of substance abuse. Individual would like staff interviewed in confidence; maintains management is not presenting an accurate review.
RESPONSE:	Referred to Management Subteam who noted that, in addition to laboratory operating rules and standards in the LANL Administrative Manual, there is an ES&H hot line and a Deficiency Ticket Program to relay information to the ES&H Coordination Center where upper or senior management may take appropriate actions to remedy situations.

CONTROL #76

DATE:	October 16, 1991
NATURE OF CONCERN:	Unidentified caller would like Tiger Team to look into TA-33 level 1 and level 2 problems.
RESPONSE:	Referred to the Safety and Health Subteam who inspected the areas of concern. A number of noncompliance issues were noted which were documented and which appear in the Tiger Team report.

CONTROL #77

DATE:	October 16, 1991
NATURE OF CONCERN:	Individual wanted a return call.
RESPONSE:	Caller wanted guidance on LANL policy on handicap access, had no concern; caller referred to the LANL ES&H Coordination Center.

CONTROL #78

DATE:	October 16, 1991
NATURE OF CONCERN:	Individual wanted a return call.
RESPONSE:	Caller was concerned with small business contracting. This was beyond Tiger Team responsibility. Caller was referred to DOE/LAAO.

CONTROL #79

DATE:	October 16, 1991
NATURE OF CONCERN:	Unidentified caller wanted to report a Tiger Team vehicle parked in a fire lane outside of Bldg. 508.
RESPONSE:	Referred to the Management Subteam who found this was not a Tiger Team vehicle.

CONTROL #80

DATE:	October 16, 1991
NATURE OF CONCERN:	Unidentified caller expressed environmental concern about chemical ground rods used at LANL.
RESPONSE:	Referred to the Environmental Subteam. Insufficient information given by caller to respond to this concern.

CONTROL #81

DATE:	October 16, 1991
NATURE OF CONCERN:	Unidentified caller asked that the Tiger Team check out LANL's microfilming operations for safety.
RESPONSE:	Referred to the Safety and Health Subteam who visited the facility. No major concerns with the safety of the operations were identified. Some deficiencies

were observed in electrical safety, housekeeping, and the location of an emergency eyewash station. These deficiencies have been documented.

CONTROL #82

DATE: October 16, 1991

NATURE OF CONCERN: Unidentified caller expressed concern with the qualifications of a person handling shipments of toxic materials.

RESPONSE: Referred to the Safety and Health Subteam who visited the area and reviewed the training records.

CONTROL #83

DATE: October 17, 1991

NATURE OF CONCERN: Unidentified caller was concerned about newly organized QA organization that does not report to top management as caller believes any good quality organization should.

RESPONSE: Referred to the Management Subteam who found this comment is justified and accurate. This is identified in the Tiger Team report.

CONTROL #84 & #139

DATE: October 17 and 25, 1991

NATURE OF CONCERN: Callers indicated HSE or Health, Safety, and Environment people from Los Alamos are circumventing the system.

RESPONSE: Referred to the Environmental Subteam. Caller was interviewed and expressed four concerns:
(1) Use of neutron assay machine to WIPP certify waste drum.
-- This is addressed in report.
(2) Feeling of unfair personnel performance appraisals received recently.
-- This is beyond scope of Tiger Team.
(3) Possible leaking TRU containers at TA-54 Area G.
-- Area G was inspected; no leaking drums were found.
(4) Disposal of asbestos and PCB and radioactive-contaminated soil (mixed) waste in TA-54.
-- Investigated and found correct, but all done in full compliance with regulations and procedures.

CONTROL #85

DATE: October 17, 1991

NATURE OF CONCERN: Unidentified caller concerned about car pool vehicles stopping in traffic at quitting times and at major intersections along Pajarito Road, especially at the TA-53 intersection, to pick up passengers. Vehicles do not pull completely off the road; then use left lanes to pass at high speeds. Asked that this be looked into.

RESPONSE: Referred to the Safety and Health Subteam who observed the situation and found this comment is justified and accurate. Concern was passed to LANL/OS to effect enforcement. Reference Control #95.

CONTROL #86

DATE: October 17, 1991

NATURE OF CONCERN: Unidentified caller indicated there are some signs that say "no parking on dirt" just north of Tiger Team parking lot that were covered and no longer are uncovered and maybe should be covered if you can't park on dirt. Also, there is a barricade on ground looking like metal hook that might catch someone's tire.

RESPONSE: Referred to the Management Subteam who found the basic problem is limited parking at LANL. The metal hook on the ground has been removed.

CONTROL #87

DATE: October 17, 1991

NATURE OF CONCERN: Unidentified caller had concern about filling of positions in the QA organization, lack of experience with QA background in top positions, and those having experience in QA being ignored for their experience.

RESPONSE: Referred to the Management Subteam who reviewed the structure of the quality assurance area and advertising/recruiting for positions in that organization. Recruiting and QA organization are addressed in the Tiger Team report.

CONTROL #88

DATE: October 17, 1991

NATURE OF CONCERN: Unidentified caller expressed safety concern about people being locked in at TA-33 when they did not have keys to get out.

RESPONSE: Referred to Safety and Health Subteam who found that the TA-33 landlord was aware of the problem and has taken corrective action. Further improvements are being studied.

CONTROL #89

DATE: October 17, 1991

NATURE OF CONCERN: This concern was received in the form of a letter, the bottom line of which is a lack of communication between the working level staff, technicians, and management. Some specific examples are:
(1) Even with ES&H courses, it is difficult to understand interpretation and practical application of rules. Need one set of rules.

(2) Wants to reduce wasteful probing and inspecting and excessive overhead charges.

(3) Cites lack of communication in ES&H area regarding getting input from the working level which, in practice, is not done. Line management seldom discusses policy matters with staff and technicians so working level is not part of decisionmaking process. Adversarial relationship between management and worker, arbitrary rules, excessive overhead, and lack of communication.

RESPONSE: Information considered by Tiger Team. Also referred to LANL for information with references to individual deleted.

CONTROL #90

DATE: October 17, 1991

NATURE OF CONCERN: Caller expressed concern on the DOE/LAAO hot line about being harassed by their supervisor and wanted to see a Tiger Team member. This was relayed by DOE/LAAO for informational purposes.

RESPONSE: It was concluded that since there appeared to be no ES&H issue and since it did appear to be an employee grievance problem, no further Tiger Team action was required.

CONTROL #91, #92, & #93

DATE: October 18, 1991

NATURE OF CONCERN: Unidentified callers expressed concern about salary discrepancies between Hispanic people and Anglos at TA-55. Wanted Tiger Team to check into this.

RESPONSE: Referred to DOE/AL for information and/or action.

CONTROL #94

DATE: October 18, 1991

NATURE OF CONCERN: Caller was representative from National Indian of Hospital and Health Care Employees. Asked for return call regarding a safety program they are working on for health care workers who take care of patients who may be injured in a WIPP accident or radioactively and chemically contaminated.

RESPONSE: Referred to the Safety and Health Subteam who returned individual's call and provided information requested.

CONTROL #95

DATE: October 18, 1991

NATURE OF CONCERN: Unidentified caller was concerned about enforcement of speed limits on technical area roads, particularly because of people jogging and walking these roads. Alluded to an accident about 10 years ago in which an employee was killed; recommendation was to enforce speed limits.

RESPONSE: Referred to the Safety and Health Subteam who passed this concern on to LANL/OS to be included in solution to concern identified in Control #85.

CONTROL #96

DATE: October 18, 1991

NATURE OF CONCERN: Caller was an employee of JCI at Power Dispatch, TA-3, SM-22 and asked for a Tiger Team member to visit TA-3,

SM-22, to look at procedures which individual believed were lacking.

RESPONSE: Referred to the Safety and Health Subteam who visited TA-3, SM-22, and identified the problem as being confusing instructions being provided to the power dispatchers in the power control section. A review of the manuals found them to be informal and lacking organization. This had been recognized in LANL's Self-Assessment; the estimate for compliance with DOE 5480.19 is about 18 months.

CONTROL #97 Reference Control #72

CONTROL #98

DATE: October 19, 1991

NATURE OF CONCERN: Unidentified caller expressed concern that two grease trucks, service trucks, stationed at the heavy equipment shop do not meet DOT requirements. Wanted Tiger Team to investigate them.

RESPONSE: Referred to the Safety and Health Team who inspected the trucks in question. One placard incorrect. Cursory safety inspection of trucks indicated no obvious deficiencies.

CONTROL #99

DATE: October 19, 1991

NATURE OF CONCERN: Unidentified caller was concerned that contractors have to go through random drug screening and Laboratory does not. Why?

RESPONSE: Referred to the Management Subteam who found that the distinction stems from the difference between LANL employees (public employees) and contractor employees (private employees). Recently adjudicated court cases and pending DOE Orders will eliminate this distinction. Also, LANL does have a procedure in place regarding substance abuse.

CONTROL #100

DATE: October 19, 1991

NATURE OF CONCERN: Unidentified caller asked Tiger Team to check on a performance evaluation that Pan Am did back in 1989

concerning environmental for whole company. Employees never told what happened.

RESPONSE: Caller left no contact and insufficient information to follow through properly. A search of audits and appraisals conducted from 1988 to 1990 did not identify an evaluation of the type expressed in this concern.

CONTROL #101

DATE: October 19, 1991

NATURE OF CONCERN: Unidentified caller wanted to know how to express an ES&H concern and who they are referred to.

RESPONSE: No response was required. However, it should be noted that LANL has an ES&H hot line, 665-5010, and, in addition, there is a Deficiency Ticket Program to relay information to the ES&H Coordination Center where upper or senior management may take appropriate actions to remedy situations.

CONTROL #102

DATE: October 19, 1991

NATURE OF CONCERN: Caller was concerned about the Laboratory's view of registered professionalism for engineers which may be a safety issue. Wanted a call back on this issue.

RESPONSE: Referred to the Management Subteam who talked with HRD regarding the policy on LANL's engineers being registered as Registered Professional Engineers. Caller expressed desire to talk directly with HRD and this was arranged. No further action was necessary.

CONTROL #103

DATE: October 19, 1991

NATURE OF CONCERN: Unidentified caller expressed concern about an individual overseeing the packaging and shipping of hazardous waste. Alleged that the individual's knowledge of RCRA and OSHA regulations is in question; cited spills, emission of gases due to improper packing, shipments that were not packed correctly, and other discrepancies.

RESPONSE: Referred to the Environmental Subteam who focused on the types of training provided, the understanding by management of environmental programs and requirements,

and the systems which ensure employees are adequately trained and competent to fulfill their job responsibilities. While several deficiencies in the EM-7 program and operations have been noted and are presented as findings in the Tiger Team report, none would support allegations of unsafe work practices or mismanagement.

CONTROL #104

DATE: October 19, 1991

NATURE OF CONCERN: Unidentified caller had a concern about a vault at TA-16, Bldg. 204, room 150, belonging to WX-12. There is an ammonia smell in one of the rooms where an Ozilad machine and copy machines are housed. Because of risk to health, etc., would like Tiger Team to get a reading on days machines are all being run.

RESPONSE: Referred to the Safety and Health Subteam who visited the facility and found a slight ammonia odor present from an Ozilad machine that uses ammonia. An industrial hygiene survey should be requested through the HS representative during peak use of the machine.

CONTROL #105

DATE: October 19, 1991

NATURE OF CONCERN: Unidentified caller asked Tiger Team to look into job bid process at LANL (cited favoritism and nepotism). Gave example of job advertised which required Masters Degree which was filled by a nondegreed person, a high-school graduate.

RESPONSE: Referred to Management Subteam who found this concern is essentially correct. Review of the particulars indicated that no one had the requisite experience and education, so the position was reclassified and a candidate was selected. In view of the reclassification, position should have been readvertised. Currently, a PS-4 review is required to examine all job advertisements.

CONTROL #106 & #112

DATE: October 19 & 22, 1991

NATURE OF CONCERN: Individual asked for a return call regarding environmental systems at TA-55.

RESPONSE: Referred to the Safety and Health Subteam who returned the individual's call and discussed the concerns stated. The Safety and Health Subteam included in the Tiger Team report concerns relating to safety documentation, division of responsibility, management oversight, and calibration program.

CONTROL #107

DATE: October 19, 1991

NATURE OF CONCERN: Caller expressed concern for people with nuclear power or nuclear Navy backgrounds in regard to quality assurance. Believes that people with those backgrounds are bypassed for positions in quality assurance.

RESPONSE: Referred to the Management Subteam who spoke with the caller and explained that QA is being addressed by the Tiger Team to the extent it applies to ES&H, but total QA is beyond the scope of the Tiger Team. Recruiting and QA organization are addressed in the Tiger Team report.

CONTROL #108

DATE: October 19, 1991

NATURE OF CONCERN: Unidentified caller expressed concern about social events held by Director's Office where alcoholic beverages are served. Cited LANL policy of not allowing illegal drugs or alcohol on LANL premises. Concerned about people having too much to drink and then driving home.

RESPONSE: Referred to the Management Subteam who reviewed LANL's restrictive policy on the serving of alcoholic beverages on the premises. Such activities require the specific approval of the Director's office, keeping in mind the "Dram Shop Laws" enacted by the State of New Mexico. No inconsistencies were found in either the policies or in stated practices.

CONTROL #109

DATE: October 21, 1991

NATURE OF CONCERN: Unidentified caller was concerned about emergency preparedness and, in particular, about evacuation from Los Alamos if it ever became necessary. Concerned because they have one road that comes into town, and when it is blocked due to accidents, road

construction, etc., long lines of cars back up. Believes Los Alamos needs a second way out of town; the route over Jemez Mountains is not a good alternative because a four-wheel-drive vehicle is needed in the winter months.

RESPONSE: Referred to the Safety and Health Subteam who, in reviewing the roads available, found no substance to this concern.

CONTROL #110

DATE: October 21, 1991

NATURE OF CONCERN: Unidentified caller was concerned about getting lighting in buildings, street lights, and security lights repaired and kept in working order.

RESPONSE: Referred to the Safety and Health Subteam who reviewed the concern with the organizations responsible for relamping. There are presently two programs: (1) a scheduled relamping program, and (2) spot relamping program to replace lights in response to reported failures. The system was found to be reasonable but does depend on failures being reported to the maintenance trouble desk. All facility coordinators have the appropriate phone numbers for reporting problems.

CONTROL #111

DATE: October 22, 1991

NATURE OF CONCERN: Unidentified caller expressed concern for those personnel working in the ES&H Coordination Center who have been working 12 hours a day, 6 days a week, for several weeks.

RESPONSE: Referred to LANL for information and/or action.

CONTROL #112 Reference Control #106

CONTROL #113

DATE: October 22, 1991

NATURE OF CONCERN: Caller was past employee of LANL who asked to speak to someone and needed a return call.

RESPONSE: Referred to the Safety and Health Subteam who spoke to the individual regarding their disability and medical

history. Investigation of the issue pointed to stress-related factors; a light-duty position was recommended by LANL and private physicians, but was not found; as a result, the employee was terminated. The site is encouraged to promote searches for work assignments that accommodate these special-type circumstances.

CONTROL #114

DATE: October 22, 1991

NATURE OF CONCERN: Individual asked for a return call from a Tiger Team member regarding fraud and safety.

RESPONSE: Concern regarding fraud was referred to the Management Subteam who spoke with the individual and found that the concern had previously been handled by the DOE/IG. Concern regarding safety was referred to the Safety and Health Subteam who found that the caller's safety issues either were not serious or had been corrected.

CONTROL #115

DATE: October 22, 1991

NATURE OF CONCERN: Unidentified caller expressed concern about no-smoking policy at TA-3, Bldg. 223, rooms 101 and 102. Also asked someone to check electrical wiring underneath computer monitors in room 101.

RESPONSE: Referred to the Safety and Health Subteam who visited the area of concern and found that the Facility Policy Book does contain a smoking policy. The supervisor interviewed said the lunch/break room has been designated as a smoking area, and offices are designated and posted as no-smoking areas. Unable to deenergize/tagout to gain access under computer monitors.

CONTROL #116

DATE: October 22, 1991

NATURE OF CONCERN: Unidentified caller had a concern about glaring lights on Pajarito in two security areas that interfere with the vision of drivers. Asked for shielding on the lights.

RESPONSE: Referred to the Safety and Health Subteam who contacted ENG-6. Appropriate action will be taken to adjust or shield as necessary.

CONTROL #117

DATE: October 23, 1991

NATURE OF CONCERN: Unidentified caller expressed concern about two areas in Bldg. 409, medical building: (1) air quality in room 113S, (2) no place for washing hands in X-Ray Dept. after seeing patients.

RESPONSE: Referred to the Safety and Health Subteam who visited the medical building. Regarding the first concern on air quality in room 113S, a Health Hazard Assessment and monitoring for this room are warranted. This is recognized as a concern in the Tiger Team report. Regarding the second concern, a sink, shower, and basin are in a room 113S adjacent to the X-Ray Dept.

CONTROL #118

DATE: October 23, 1991

NATURE OF CONCERN: Individual asked for a return call.

RESPONSE: Caller had a concern in the delay in getting a Q-clearance. Not an ES&H issue. Information was referred to DOE/AL for information and/or action.

CONTROL #119

DATE: October 23, 1991

NATURE OF CONCERN: Individual asked for information on getting reports written by the Tiger Team at different facilities.

RESPONSE: Caller was provided with information requested.

CONTROL #120

DATE: October 23, 1991

NATURE OF CONCERN: Unidentified caller was concerned about the JCI Crane Program and maintenance of the cranes. Indicated that there is not enough manpower and that they are not adequately trained. Said there are 1,000 cranes, lifting devices, and only 8 to 10 people to perform maintenance/inspections. Cited loose or missing bolts and old machines where parts are no longer available.

RESPONSE: Referred to the Safety and Health Subteam who noted that JCI does have a crane maintenance and inspection program. However, inspections are not done on a timely

basis, and the Tiger Team did find some problems with the cranes and documentation for annual inspections.

CONTROL #121

DATE: October 23, 1991

NATURE OF CONCERN: Unidentified caller indicated concern that there was a lockdown at TA-55 on Tuesday, 10/22/91, and no responsible person was on-site to let them know what was going on.

RESPONSE: This was referred to LANL who found this was a valid concern because there are no formal, documented procedures for notification of a facility closure for personnel reporting to work. NMT Division management will develop a formal procedure which will be incorporated into the TA-55 Facility Emergency Plan. After this procedure has been developed, all TA-55 personnel will receive a copy from their supervision.

CONTROL #122 Reference Control #17

CONTROL #123

DATE: October 24, 1991

NATURE OF CONCERN: Unidentified caller was concerned about government truck parked at credit bureau for 45 minutes. Truck checked out to the Utility Support Group.

RESPONSE: This was not an ES&H concern. No response was required.

CONTROL #124

DATE: October 24, 1991

NATURE OF CONCERN: Unidentified caller had concern about a new policy in MAT-3 regarding rumors and evaluating technicians on the rumor policy. Caller would appreciate if Tiger Team would look into this.

RESPONSE: This was not an ES&H concern. Information was referred to DOE/LAAO for information and/or action.

CONTROL #125

DATE: October 24, 1991

NATURE OF CONCERN: Unidentified caller had a complaint about station 303 at PA-3, entrance to MEC and OS Divisions. The entrances are very narrow and have both vehicular and pedestrian traffic. Concerned someone may get run over or hurt.

RESPONSE: Referred to the Safety and Health Subteam who passed the concern on to OS to take appropriate action. This has been identified as a concern in the Tiger Team report.

CONTROL #126 & #136

DATE: October 24 and 25, 1991

NATURE OF CONCERN: Caller had several safety and health concerns to pass on to the Tiger Team. Asked for a return call.

RESPONSE: Referred to the Safety and Health Subteam who found the caller had two concerns: (1) the Van De Graf accelerator in the basement of SM-34, TA-3, a building which is also used for general offices, and (2) personnel in the IBML handled radioactive targets without proper radiological controls or extremity dosimetry. Both of these issues are addressed in the Tiger Team report.

CONTROL #127

DATE: October 24, 1991

NATURE OF CONCERN: Caller had a complaint they wished to file and asked for a return call.

RESPONSE: Referred to Safety and Health Subteam. Caller had a personal health problem regarding use of toxic paints. However, caller requested complete anonymity, so personal medical records and other files were not accessed. General painting activities are addressed in the Tiger Team report.

CONTROL #128

DATE: October 24, 1991

NATURE OF CONCERN: Caller asked for a return call regarding a health issue in the administration area which they believe is not being adequately addressed.

RESPONSE: Referred to Safety and Health Subteam who spoke with individual regarding the no-smoking policy in the administration building. There is a no-smoking policy in effect, but the policy is not enforced.

CONTROL #129 Reference Control #49

CONTROL #130

DATE: October 24, 1991

NATURE OF CONCERN: Unidentified caller was concerned about wages of minority and nonminority employees at TA-55 and the inequalities.

RESPONSE: Referred to the Management Subteam who reviewed LANL salaries for the last 2 to 3 years and was not able to identify significant differences.

CONTROL #131

DATE: October 24, 1991

NATURE OF CONCERN: Unidentified caller expressed concern about the physical exam policy at Pan Am and how often employees go in for exams; in addition, was concerned about physical exams for persons over 40 years of age with particular problems (mentioned a hearing problem).

RESPONSE: Referred to the Safety and Health Subteam who identified that the LANL Occupational Medicine Group has not kept pace with the periodic medical examinations as required by DOE 5480.8 for JCI and other contractor personnel. The caller's concern is valid and is addressed in the Tiger Team report.

CONTROL #132

DATE: October 24, 1991

NATURE OF CONCERN: This concern is in the form of a letter from a LANL ES&H professional employee. The employee requested that the Tiger Team interview some of LANL's ES&H managers and employees regarding the attitude, commitment, and competence demonstrated by LANL upper management on ES&H issues.

Individual believes that the senior managers do not place enough value on ES&H programs and ES&H technical skills even though there may be intense involvement

during the assessment. Caller wondered whether it is a real commitment or will it change after the Tiger Team departs.

The morale among ES&H professionals at LANL is low and senior management support for ES&H needs to improve. Stated several reasons for low morale.

RESPONSE: Referred to the Management Subteam who developed a detailed questionnaire and conducted 20 additional interviews of working-level ES&H professionals. The results of these interviews were used to develop the management findings in the report.

CONTROL #133

DATE: October 25, 1991

NATURE OF CONCERN: Unidentified caller asked why an old can of ether has not been removed from the Sigma complex.

RESPONSE: Referred to the Safety and Health Subteam who was unable to pursue the concern with the information given.

CONTROL #134

DATE: October 25, 1991

NATURE OF CONCERN: Unidentified caller had a concern that there is no way to rescue people who enter a depleted oxygen area at sites remote from the fire department. No training with SCBA (Self-Contained Breathing Apparatus) for people at remote sites.

RESPONSE: Referred to the Safety and Health Subteam who found this is a valid concern which is addressed in the Tiger Team report.

CONTROL #135

DATE: October 25, 1991

NATURE OF CONCERN: Unidentified caller was concerned about a healthy environment to work in where there is machining of G-10 fiberglass material that is filling up the whole main shop area with fiberglass dust. Needs someone to check it out and see how safe it is.

RESPONSE: Referred to the Safety and Health Subteam who visited the TA-3, SM-39, metal stock area, and found this is a valid concern. A Health Hazard Assessment and monitoring of milling G-10 is warranted. This concern is addressed in the Tiger Team report regarding health hazard assessments and monitoring.

CONTROL #136 Reference Control #126

CONTROL #137

DATE: October 25, 1991

NATURE OF CONCERN: Unidentified caller expressed concern about Johnson Controls Line Department Power Distribution in two areas:
(1) Unqualified personnel cutting weeds and cleaning snow.

(2) Late night call outs in winter and spring when there are lightning storms and only one person is out on job. Would like to have two people.

RESPONSE: Referred to the Safety and Health Subteam who has noted this concern in the OSHA 1-B Forms.

CONTROL #138

DATE: October 25, 1991

NATURE OF CONCERN: Unidentified caller expressed a safety concern at TA-55, PF-4, room 429, on how and who wires furnaces; they are not grounded and technicians are wiring furnaces there. Also, concerned about glove box fitting furnaces. Said nonqualified personnel are doing electrical work that does not meet any codes.

RESPONSE: Referred to the Safety and Health Subteam who has noted this concern in the OSHA 1-B Forms.

CONTROL #139 Reference Control #84

CONTROL #140

DATE: October 25, 1991

NATURE OF CONCERN: Caller asked for a return call.

RESPONSE: Referred to Safety and Health Subteam who returned the call. Caller claimed to have been fired 2 years ago

for raising safety concerns, but could not provide any specific safety issues to be investigated.

CONTROL #141

DATE: October 25, 1991

NATURE OF CONCERN: Unidentified caller asked why there are so many staff machine shops with unqualified people in them.

RESPONSE: Referred to the Safety and Health Subteam who found that there are many examples of sitewide training deficiencies related to safe performance of work. It was determined that most of these deficiencies relate to the lack of a sitewide program to provide identification of training needs. This concern is noted in the Tiger Team report.

CONTROL #142

DATE: October 25, 1991

NATURE OF CONCERN: Caller was concerned about the disposition of a deficiency ticket written some time ago.

RESPONSE: Referred to LANL for information and/or action.

CONTROL #143

DATE: October 25, 1991

NATURE OF CONCERN: Unidentified caller was concerned about the matter of attendance and travel at LANL and possible abuse in these areas.

RESPONSE: This was not an ES&H concern. Referred to DOE/AL for information and/or action.

CONTROL #144

DATE: October 25, 1991

NATURE OF CONCERN: Unidentified caller expressed a concern about LANL road closures and the fact that signs are not posted at the foot of Pajarito or West Jemez when these roads are closed to traffic.

RESPONSE: Referred to LANL for appropriate action.

CONTROL #145

DATE: October 25, 1991

NATURE OF CONCERN: Unidentified caller asked someone to check into T-Division regarding mismanagement by the deputy, personnel coordinator, and division leader.

RESPONSE: Referred to Management Subteam who found no ES&H deficiencies other than those listed in the Tiger Team report.

CONTROL #146

DATE: October 25, 1991

NATURE OF CONCERN: Unidentified caller asked why the majority of machine work at LANL is now being done in shops in Albuquerque and other states without checking their safe condition of operation.

RESPONSE: Referred to the Management Subteam. LANL subcontracts or purchase orders for offsite services do contain a standard ES&H clause which requires compliance with applicable Federal or state laws and regulations and which gives LANL the right to inspect the facilities to ensure compliance.

CONTROL #147 & #152

DATE: October 26, 1991

NATURE OF CONCERN: Employee of LANL called to ask for an interview with Tiger Team.

RESPONSE: Referred to the Safety and Health Subteam. Caller's concern regarded personal health matters due to occupational exposures. Caller is in evaluation for medical disability retirement. Caller's medical and personnel files were reviewed. LANL evaluation is pending, but actions to date appeared appropriate.

CONTROL #148 Reference Control #72

CONTROL #149

DATE: October 26, 1991

NATURE OF CONCERN: Unidentified caller expressed concern that DOE security clearance procedures do not respect people's

right to privacy in pursuing appropriate medical background.

RESPONSE: Referred to DOE/AL for information and/or action.

CONTROL #150

DATE: October 26, 1991

NATURE OF CONCERN: Caller had complaint that LANL does not honestly communicate with the public and that acquiring information through FOIA has been difficult, particularly on environmental, safety, and health issues. Caller indicated that the ES&H flow of information is part of a larger information flow problem. Problems are not with technical staff but with management. Community relations people would like to have better access of information.

RESPONSE: Referred to the Management Subteam who identified the lack of an aggressive, proactive ES&H community relations outreach program at LANL. This is identified in the LANL Self-Assessment and is included as a finding in the Tiger Team report.

CONTROL #151

DATE: October 26, 1991

NATURE OF CONCERN: Unidentified caller concerned about review system for policies and whether policies are actually reviewed at LANL.

RESPONSE: Referred to the Management Subteam. Since issues are similar, handled as part of concerns raised in Control #132.

CONTROL #152 Reference Control #147

CONTROL #153

DATE: October 26, 1991

NATURE OF CONCERN: Unidentified caller expressed concern about: (1) hot areas north of Bldg. 287; area designated as "T" is hot and not well marked; people can drive up to area, get out of their cars, and walk into this hot area; (2) also on south side of Bldg. 4, black ooze and it is hot.

RESPONSE: Referred to the Safety and Health Subteam who visited the area: (1) no problem could be found with posting of signs, and (2) no black ooze could be found on any side of Bldg. 4; black tar exists, but it is not radioactive.

CONTROL #154

DATE: October 28, 1991

NATURE OF CONCERN: Unidentified caller wanted to let Tiger Team know of a meeting of the Los Alamos Community Working Committee, which will be held at 7 p.m., Wednesday, October 30, 1991, at the Los Alamos Inn. The subject of the meeting will be cancer in Los Alamos. The caller expressed concern about the role occupational health provided the people who had cancer, but the cancer was not discovered until the terminal stages.

RESPONSE: Referred to the Safety and Health Subteam. The scope of the assessment did include the issue related to cancer incident rates and implementation of the medical program. Some concerns were identified in the Tiger Team report related to organization of the Medical Department, medical facilities, and implementation of the medical program.

**** This is the end of the Tiger Team Hot Line Calls and Responses ****

APPENDIX H

TIGER TEAM SELF-ASSESSMENT TASK GROUP MEMORANDUM FINDINGS AND CONCERNS DATA

APPENDIX H
SELF-ASSESSMENT FINDINGS DATA

This appendix consists of the following:

(1) The request document sent the Environmental, Technical Safety Appraisal, and Management and Organization Subteams and the Self-Assessment Task Group to obtain the necessary information to score the self-assessment documents of the Laboratory, LAAO, and AL.

(2) The compiled scoring of each finding/concern of the Environmental Subteam, the Technical Safety Appraisal Subteams, the Management and Organization Subteam and the Self-Assessment Task Group. Each finding is rated as being fully disclosed, partially disclosed or not covered by a self-assessment report. Summary data are compiled and presented here and in the report summary sections.

INSTRUCTIONS
Rev 1 10/2
COLLECTING SELF-ASSESSMENT DATA

TO: All Tiger Team Members

FROM: Self-Assessment Task Group

The Management Sub-team is responsible for evaluating the effectiveness of the LANL, LAAO, and the FO-AL self-assessment reports and programs and to incorporate the results of the evaluation into Chapter 6 of the LANL Tiger Team Assessment Report. A small group of representatives of the various subteams and led by the Deputy Tiger Team Leader, Ron Hultgren (5-7154), has been formed to support this effort. The following are members of the group:

Management Subteam:

Yvonne Garbe	(5-7166) Lead
Steve Casto	(5-6585)
Marvin Norin	(5-6584)
Dick Loop	(5-6582)

TSA Team:

Lorin Brinkerhoff	(5-6894) Lead
Harry Groh	(5-6868)
Leon Meyer	(5-6756)
Bernard Kokenge	(5-6870)

Environmental Team:

Andrea Heintzelman (5-6798)

Each Tiger Team Member should provide the following information to his/her subteam representatives. A sample form is attached to organize this information.

1. Indicate whether each identified finding/concern was fully, partially or not addressed in the respective self-assessment documents. The documents are defined as:

LANL: LA-12200-MS, Los Alamos National Laboratory ES&H Self-Assessment Report, August 1991 and all Division and Group self assessments published by September 23. These applicable Division and Group self-assessments are being gathered by the Laboratory and will be made available to you at a later date.

DOE-AL: Self-Assessment Report - Volume 1, September 1991.

DOE-LAAO: Self-Assessment Report -September 1991

2. The finding/concern should be identified by its number within the tiger team report, its respective location within the self-assessment document by

self-assessment identifier number and with the name of a responsible person to contact if clarification is needed (see Attachment 1).

3. Please use one form for each finding/concern. If findings/concerns are relevant to different organizations e.g. LANL, LAAO, AL then please use a different form for each organization.

As an additional input you should also prepare an overall evaluation of the quality of the self-assessment in your area of expertise (see Attachment 2). The narrative should answer at least the following questions:

(a) To what extent was the area covered in the self-assessment, e.g., clarity, comprehensiveness, adequacy of documentation.

(b) Is there evidence that the findings/concerns were analyzed for causal factors, root causes, etc?

(c) What is the adequacy of the proposed corrective action(s), e.g.,does the response show an understanding of the problem and its requirements; will the proposed action eliminate the problem; and are the milestones and resource allocations reasonable?

(d) Did the appropriate person(s) identify the finding? (Inappropriate examples would be an over reliance on outside contractors.

NOTE: For the Safety Teams, do not complete the forms and summary paragraph until <u>after</u> the full team review.

Attachment 1 Rev 1 10/2

SELF-ASSESSMENT DATA FORM

TIGER TEAM FINDING/CONCERN NUMBER:_____

WAS: FULLY___ PARTIALLY___ NOT___

ADDRESSED BY THE FOLLOWING SELF-ASSESSMENT FINDING/CONCERN

LANL NUMBER (IN THE LANL SA REPORT)_____
or
DIVISION OR GROUP SELF ASSESSMENT REF._____

_____

_____
(ORGANIZATION NUMBER, PAGE NUMBER,APPROX. LOCATION -- ATTACH A COPY OF THE REFERENCE IF POSSIBLE FOR THIS)

DOE-AL NUMBER(IN THE AL SA REPORT) _____

DOE-LAAO NUMBER(IN THE LAAO SA REPORT)_____

FOR CLARIFICATION CONTACT:_____
(Tiger Team member/ tel # at LANL and contact number after you leave the site).

Attachment 2

Date:----------

Tiger Team Name:----------

Discipline:----------

EVALUATION SUMMARY (1 - 2 paragraphs)

SAFETY AND HEALTH TEAM #1

Concern	Organiz.	Fully	Partially	Not Covered
OA.1-1	LANL		X	
OA.1-2	AL		X	
OA.1-3	LANL	X		
OA.2-1	LANL		X	
OA.3-1	LANL		X	
OA.5-1	LANL		X	
OA.6-1	LANL	X		
OA.7-1	LANL	X		
OA.7-2	AL		X	
OA.7-3	LANL		X	
OA.7-4	LANL	X		
QV.1-1	LANL		X	
QV.1-2	LANL		X	
QV.1-3	LANL	X		
QV.2-1	LANL	X		
QV.3-1	LANL		X	
QV.4-1	LANL	X		
QV.5-1	LANL		X	
QV.5-2	LANL		X	
QV.6-1	LANL		X	
QV.7-1	LANL		X	
OP.1-1	LANL		X	
OP.2-1	LANL		X	
OP.2-2	LANL		X	
OP.3-1	LANL		X	
OP.3-2	LANL		X	
OP.4-1	LANL		X	
OP.4-2	LAAO			X
	AL			X
OP.5-1	LANL		X	
OP.6-1	LAAO			X
	AL			X
OP.6-2	LANL		X	
MA.1-1	LANL	X		
MA.1-2	LANL	X		
MA.3-1	LANL	X		
MA.5-1	LANL			X
TC.1-1	LANL		X	
TC.3-1	LANL		X	
TC.4-1	LANL			X
TC.4-2	LANL			X
TC.5-1	LANL		X	
TC.11-1	LANL	X		

Concern	Organiz.	Fully	Partially	Not Covered
AX.1-1	LANL			X
AX.1-2	LANL	X		
AX.1-3	LANL			X
AX.1-4	LANL			X
AX.1-5	LANL		X	
AX.2-1	LANL		X	
AX.3-1	LANL		X	
AX.4-1	LANL			X
AX.5-1	LANL			X
AX.5-2	LANL			X
AX.5-3	LANL			X
AX.6-1	LANL			X
AX.6-2	LANL	X		
AX.6-3	LANL			X
EP.1-1	LANL		X	
EP.2-1	LANL		X	
EP.2-2	LANL		X	
EP.2-3	LANL		X	
EP.3-1	LANL		X	
TS.1-1	LANL	X		
PT.1-1	LANL	X		
PT.1-2	LANL	X		
PT.2-1	LANL	X		
PT.3-1	LANL	X		
PT.6-1	LANL		X	
CS.1-1	LANL	X		
CS.1-2	LANL	X		
CS.1-3	LANL	X		
CS.1-4	LANL	X		
CS.1-5	AL			X
CS.1-6	LANL		X	
CS.2-1	LANL	X		
CS.3-1	LANL	X		
CS.4-1	LANL	X		
CS.4-2	LANL			X
CS.4-3	LANL		X	
CS.4-4	LANL	X		
CS.5-1	LANL			X
CS.5-2	LANL	X		
EA.2-1	LANL	X		
EA.2-2	LANL		X	

Concern	Organiz.	Fully	Partially	Not Covered
FR.1-1	LANL		X	
FR.2-1	LANL		X	
FR.2-2	LANL		X	
FR.5-1	LANL		X	
RP.3-1	LANL		X	
RP.3-2	LANL	X		
RP.3-3	LANL	X		
RP.4-1	LANL			X
RP.5-1	LANL			X
RP.6-1	LANL	X		
RP.6-2	LANL	X		
RP.8-1	LANL		X	
RP.8-2	LANL			X
RP.9-1	LANL		X	
RP.9-2	LANL		X	
RP.11-1	LANL	X		
RP.11-2	LANL			X
RP.11-3	LANL			X
RP.12-1	LANL	X		
PP.2-1	LANL			X
PP.4-1	LANL	X		
PP.5-1	LANL		X	
WS.3-1	LANL		X	
WS.4-1	LANL	X		
FP.2-1	LANL		X	
FP.2-2	LANL		X	
FP.2-3	LANL		X	
FP.2-4	LANL			X
FP.2-5	LANL			X
FP.3-1	LANL		X	
FP.7-1	LANL		X	
FP.7-2	LANL			X
FP.7-3	LANL		X	
FP.7-4	LANL			X
FP.7-5	LANL		X	
FP.7-6	LANL		X	
FP.7-7	LANL			X
FP.7-8	LANL			X
NP.1-1	LANL	X		
NP.1-2	LANL		X	
NP.2-1	LANL		X	
NP.3-1	LANL		X	
NP.3-2	LANL		X	
NP.3-3	LANL		X	

Concern	Organiz.	Fully	Partially	Not Covered	
NP.4-1	LANL		X		
NP.4-2	LANL	X			
NP.5-1	LANL	X			
NP.5-2	LANL		X		
NP.6-1	LANL		X		
NP.6-2	LANL	X			
NP.6-3	LANL		X		
NP.7-1	LANL		X		
					Totals
Totals	LANL	40 (31%)	63(49%)	26 (20%)	129
	LAAO	0 (0%)	0 (0%)	2 (100%)	2
	AL	0 (0%)	2 (40%)	3 (60%)	5

SAFETY AND HEALTH TEAM #2

Concern	Organiz.	Fully	Partially	Not Covered
OA.1-1	LANL	X		
OA.1-2	LANL	X		
OA.2-1	LANL		X	
OA.2-2	LANL	X		
OA.2-3	LANL	X		
OA.3-1	LANL		X	
OA.5-1	LANL	X		
OA.6-1	LANL	X		
OA.8-1	LANL	X		
OA.8-2	LANL	X		
QV.1-1	LANL	X		
QV.1-2	LANL	X		
QV.2-1	LANL	X		
QV.3-1	LANL	X		
QV.5-1	LANL	X		
QV.6-1	LANL	X		
QV.7-1	LANL	X		
OP.2-1	LANL			X
OP.2-2	LANL			X
OP.2-3	LANL			X
OP.3-1	LANL			X
OP.3-2	LANL		X	
OP.4-1	LANL	X		
OP.4-2	LANL			X
OP.5-1	LANL			X
OP.5-2	LANL			X
OP.5-3	LANL	X		
OP.5-4	LANL		X	
OP.5-5	LANL			X
OP.6-1	LANL	X		
OP.8-1	LANL	X		
MA.1-1	LANL		X	
MA.2-1	LANL	X		
MA.2-2	LANL	X		
MA.5-1	LANL	X		
MA.6-1	LANL	X		
TC.1-1	LANL	X		
TC.1-2	LANL		X	
TC.2-1	LANL			X
TC.2-2	LANL	X		
TC.2-3	LANL			X
TC.2-4	LANL	X		
TC.3-1	LANL	X		
TC.3-2	LANL	X		

Concern	Organiz.	Fully	Partially	Not Covered
TC.3-3	LANL		X	
TC.5-1	LANL			X
TC.10-1	LANL	X		
TC.11-1	LANL	X		
AX.1-1	LANL	X		
AX.1-2	LANL			X
AX.2-1	LANL	X		
AX.5-1	LANL			X
AX.5-2	LANL	X		
AX.6-1	LANL	X		
AX.6-2	LANL		X	
AX.8-1	LANL		X	
EP.1-1	LANL	X		
EP.2-1	LANL	X		
EP.2-2	LANL	X		
EP.3-1	LANL	X		
TS.1-1	LANL		X	
TS.1-2	LANL	X		
TS.2-1	LANL	X		
TS.2-2	AL		X	
TS.8-1	LANL			X
PT.1-1	LANL	X		
PT.1-2	LANL		X	
PT.2-1	LANL	X		
PT.3-1	LANL	X		
PT.4-1	LANL	X		
PT.4-2	LANL			X
PT.4-3	LANL	X		
PT.6-1	LANL			X
PT.10-1	LANL	X		
PT.11-1	LANL	X		
PT.11-2	LAAO	X		
	AL		X	
SS.1-1	LANL			X
SS.4-1	LANL		X	
EA.2-1	LANL		X	
EA.2-2	LANL			X
EA.4-1	LANL		X	
FR.2-1	LANL			X
FR.2-2	LANL			X
FR.3-1	LANL			X
FR.3-2	LANL		X	

Concern	Organiz.	Fully	Partially	Not Covered
FR.4-1	LANL		X	
FR.6-1	LANL		X	
FR.6-2	LANL	X		
RP.1-1	LANL	X		
RP.1-2	LANL		X	
RP.1-3	LANL			X
RP.2-1	LANL	X		
RP.3-1	LANL		X	
RP.4-1	LANL			X
RP.5-1	LANL			X
RP.5-2	LANL			X
RP.6-1	LANL			X
RP.6-2	LANL			X
RP.6-3	LANL			X
RP.7-1	LANL	X		
RP.8-1	LANL		X	
RP.8-2	LANL		X	
RP.8-3	LANL		X	
RP.8-4	LANL		X	
RP.8-5	LANL			X
RP.9-1	LANL			X
RP.10-1	LANL			X
PP.1-1	LANL		X	
PP.4-1	LANL			X
WS.4-1	LANL	X		
WS.4-2	LANL	X		
FP.3-1	LANL	X		
FP.4-1	LANL		X	
FP.5-1	LANL	X		
FP.7-1	LANL			X
FP.7-2	LANL		X	
FP.7-3	LANL		X	
MS.1-1	LANL		X	
MS.1-2	LANL	X		
MS.1-3	LANL	X		
MS.2-1	LANL		X	
MS.2-2	LANL		X	
MS.2-3	LANL			X
MS.3-1	LANL		X	
MS.3-2	LANL			X
MS.3-3	LANL			X

Concern	Organiz.	Fully	Partially	Not Covered	
MS.3-4	LANL		X		
MS.3-5	LANL	X			
MS.3-6	LANL		X		
MS.4-1	LAAO	X			
	AL		X		
MS.4-2	LANL	X			
MS.4-3	LANL		X		
MS.5-1	LANL			X	
					Totals
Totals	LANL	59 (45%)	34 (26%)	37 (29%)	130
	LAAO	2 (100%)	0 (0%)	0 (0%)	2
	AL	0 (0%)	3 (100%)	0 (0%)	3

SAFETY AND HEALTH TEAM #3

Concern	Organiz.	Fully	Partially	Not Covered
OA.1-1	LANL	X		
OA.1-2	AL		X	
OA.2-1	LANL		X	
OA.2-2	LANL	X		
OA.2-3	LANL	X		
OA.5-1	LANL		X	
OA.6-1	LANL		X	
QV.1-1	LANL	X		
QV.1-2	LANL		X	
QV.2-1	LANL	X		
QV.3-1	LANL	X		
QV.5-1	LANL	X		
QV.5-2	LANL	X		
QV.5-3	LANL	X		
QV.6-1	LANL	X		
QV.7-1	LANL		X	
OP.1-1	LANL		X	
OP.1-2	LANL		X	
OP.2-1	LANL		X	
OP.2-2	LANL	X		
OP.2-3	LANL		X	
OP.4-1	LANL		X	
MA.2-1	LANL	X		
MA.2-2	LANL		X	
MA.3-1	LANL	X		
MA.3-2	LANL		X	
MA.5-1	LANL		X	
MA.8-1	LANL	X		
TC.1-1	LANL	X		
TC.1-2	LANL	X		
TC.4-1	LANL		X	
TC.4-2	LAAO		X	
TC.10-1	LANL	X		
AX.1-1	LANL	X		
AX.1-2	LANL	X		
AX.1-3	LANL		X	
AX.1-4	LANL	X		
AX.1-5	LANL	X		
AX.2-1	LANL	X		

Concern	Organiz.	Fully	Partially	Not Covered
AX.2-2	LANL	X		
AX.3-1	LANL	X		
AX.5-1	LANL	X		
AX.5-2	LANL	X		
AX.6-1	LANL		X	
AX.7-1	LANL	X		
EP.1-1	LANL		X	
EP.2-1	LANL		X	
EP.3-1	LANL		X	
TS.1-1	LANL			X
TS.1-2	LANL		X	
TS.2-1	LANL		X	
TS.2-2	LANL		X	
TS.3-1	LANL		X	
TS.5-1	LANL			X
TS.5-2	LANL			X
PT.1-1	LANL		X	
PT.1-2	LANL		X	
PT.2-1	LANL	X		
PT.3-1	LANL	X		
PT.4-1	LANL	X		
PT.6-1	LANL	X		
PT.8-1	LANL	X		
PT.11-1	LANL	X		
SS.2-1	LANL			X
SS.2-2	LANL		X	
EA.1-1	LANL	X		
EA.2-1	LANL	X		
EA.3-1	LANL	X		
EA.4-1	LANL	X		
FR.6-1	LANL	X		
RP.1-1	LANL	X		
RP.1-2	LANL		X	
RP.3-1	LANL		X	
RP.3-2	LANL			X
RP.4-1	LANL		X	
RP.4-2	LANL		X	
RP.4-3	LANL			X
RP.4-4	LANL		X	
RP.6-1	LANL			X
RP.8-1	LANL	X		

Concern	Organiz.	Fully	Partially	Not Covered
RP.10-1	LANL		X	
RP.10-2	LANL		X	
RP.10-3	LANL			X
RP.11-1	LANL	X		
RP.12-1	LANL		X	
PP.1-1	AL		X	
PP.1-2	LANL		X	
PP.2-1	LANL		X	
PP.4-1	LANL	X		
PP.4-2	LANL	X		
PP.4-3	AL			X
PP.6-1	LANL		X	
PP.6-2	LANL		X	
PP.6-3	LANL		X	
PP.6-4	LANL		X	
PP.6-5	LANL		X	
pp.6-6	LANL		X	
PP.6-7	LANL	X		
WS.3-1	LANL		X	
WS.4-1	LANL	X		
WS.4-2	LANL	X		
WS.4-3	LANL	X		
WS.4-4	LANL	X		
FP.1-1	LANL		X	
FP.1-2	LANL		X	
FP.2-1	LANL		X	
FP.3-1	LANL	X		
FP.4-1	LANL		X	
FP.5-1	LANL		X	
FP.5-2	LANL			X
FP.5-3	LANL		X	
FP.7-1	LANL		X	

					Totals
Totals	LANL	49	(45%)	50 (46%) 9 (9%)	108
	LAAO	0	(0%)	1 (100%) 0 (0%)	1
	AL	0	(0%)	2 (67%) 1 (33%)	3

SAFETY AND HEALTH TEAM #4

Concern	Organiz.	Fully	Partially	Not Covered
OA.1-1	LANL	X		
OA.1-2	LANL		X	
OA.1-3	LAAO		X	
OA.1-4	LANL	X		
OA.1-5	LAAO	X		
OA.1-6	LANL	X		
OA.2-1	LANL	X		
OA.2-2	LANL		X	
OA.3-1	LANL		X	
OA.4-1	LANL	X		
OA.6-1	LANL	X		
OA.6-2	LANL			X
OA.7-1	LANL	X		
QV.1-1	LANL	X		
QV.1-2	LANL		X	
QV.1-3	AL		X	
QV.1-4	LAAO		X	
QV.1-5	LANL	X		
QV.1-6	LANL	X		
QV.1-7	LANL	X		
QV.1-8	LANL		X	
QV.1-9	LANL	X		
QV.3-1	AL			X
QV.3-2	LANL			X
QV.4-1	LANL		X	
OP.2-1	LANL	X		
OP.2-2	LANL	X		
OP.2-3	LANL			X
OP.2-4	LANL		X	
OP.3-1	LANL	X		
OP.3-2	LANL			X
OP.3-3	LAAO			X
OP.3-4	DOE-HQ			X
OP.4-1	LANL	X		
OP.6-1	LANL	X		
MA.1-1	LANL	X		
MA.2-1	LANL	X		
MA.3-1	LANL	X		
MA.3-2	LANL	X		
MA.3-3	LANL	X		
MA.4-1	LANL	X		
MA.5-1	LANL	X		
MA.5-2	LANL	X		

Concern	Organiz.	Fully	Partially	Not Covered
MA.6-1	LANL	X		
MA.6-2	LANL	X		
MA.7-1	LANL	X		
MA.7-2	LANL	X		
MA.8-1	LANL	X		
TC.1-1	LANL	X		
TC.1-2	LANL		X	
TC.4-1	LANL		X	
TC.4-2	LANL		X	
TC.4-3	LANL		X	
TC.4-4	LANL		X	
TC.5-1	LANL		X	
TC.5-2	LANL		X	
TC.6-1	LANL		X	
TC.7-1	LANL	X		
TC.8-1	LANL		X	
TC.9-1	LANL	X		
TC.10-1	LANL	X		
AX.1-1	LANL	X		
AX.1-2	LANL	X		
AX.1-3	LANL	X		
AX.1-4	LANL		X	
AX.1-5	LANL	X		
AX.1-6	LANL	X		
AX.2-1	LANL	X		
AX.2-2	LANL	X		
AX.5-1	LANL		X	
AX.5-2	LANL	X		
AX.5-3	LANL	X		
AX.5-4	LANL			X
AX.6-1	LANL	X		
AX.6-2	LANL	X		
AX.6-3	AL	X		
EP.1-1	LANL	X		
EP.1-2	LANL	X		
EP.1-3	LANL	X		
EP.1-4	LAAO	X		
EP.2-1	LANL	X		
EP.2-2	LANL	X		
EP.2-3	LANL	X		
EP.3-1	LANL	X		
EP.4-1	LANL	X		
EP.4-2	LANL	X		
EP.4-3	LANL	X		

Concern	Organiz.	Fully	Partially	Not Covered
EP.5-1	LANL	X		
EP.5-2	LANL	X		
EP.5-3	LANL	X		
EP.6-1	LAAO	X		
EP.6-2	LANL	X		
EP.7-1	LANL	X		
TS.1-1	LANL	X		
TS.1-2	LANL		X	
TS.2-1	LANL	X		
TS.2-2	LANL		X	
TS.2-3	LANL		X	
TS.3-1	LANL		X	
TS.3-2	LANL	X		
TS.3-3	LANL			X
TS.4-1	LANL		X	
PT.1-1	LANL	X		
PT.1-2	LANL	X		
PT.1-3	LANL		X	
PT.1-4	LANL		X	
PT.2-1	LANL	X		
PT.3-1	LANL	X		
PT.3-2	LANL	X		
PT.3-3	LANL	X		
PT.3-4	LANL		X	
PT.3-5	AL			X
PT.3-6	LAAO		X	
PT.4-1	LANL	X		
PT.4-2	LANL	X		
PT.4-3	LANL		X	
PT.5-1	LANL	X		
PT.6-1	LANL		X	
PT.6-2	LANL	X		
PT.6-3	LANL		X	
PT.8-1	LANL	X		
PT.8-2	LANL	X		
PT.8-3	LANL		X	
PT.8-4	LANL	X		
PT.9-1	LANL	X		
PT.10-1	LANL	X		
PT.12-1	LANL		X	
PT.12-2	LANL	X		
SS.2-1	LANL	X		
SS.3-1	LANL	X		
SS.3-2	LANL		X	

Concern	Organiz.	Fully	Partially	Not Covered
SS.4-1	LANL	X		
SS.4-2	LANL	X		
SS.4-3	LANL	X		
SS.4-4	LANL			X
EA.1-1	LANL		X	
EA.2-1	LANL		X	
EA.3-1	LANL	X		
EA.4-1	LANL	X		
FR.1-1	LANL	X		
FR.1-2	LANL	X		
FR.2-1	LANL		X	
FR.4-1	LANL			X
FR.4-2	LANL	X		
FR.5-1	LANL	X		
FR.6-1	LANL		X	
FR.6-2	LANL		X	
RP.1-1	LANL	X		
RP.2-1	LANL	X		
RP.2-2	LANL		X	
RP.2-3	LANL	X		
RP.3-1	LANL	X		
RP.3-2	LANL		X	
RP.3-3	LANL			X
RP.3-4	LANL	X		
RP.3-5	LANL		X	
RP.5-1	LANL	X		
RP.5-2	LANL	X		
RP.5-3	LANL			X
RP.5-4	LANL		X	
RP.5-5	LANL	X		
RP.7-1	LANL	X		
RP.7-2	LANL	X		
RP.7-3	LANL		X	
RP.7-4	LANL			X
RP.7-5	LANL	X		
RP.10-1	LANL	X		
RP.10-2	LANL	X		
RP.10-3	LANL		X	
RP.10-4	LANL		X	
RP.10-5	LANL			X
RP.10-6	LANL			X
PP.1-1	LANL	X		
PP.1-2	LANL	X		
PP.1-3	LANL	X		

Concern	Organiz.	Fully	Partially	Not Covered
PP.2-1	LANL	X		
PP.2-2	LANL	X		
PP.2-3	LANL		X	
PP.2-4	LANL	X		
PP.2-5	LANL	X		
PP.2-6	LANL	X		
PP.3-1	LANL	X		
PP.3-2	LANL	X		
PP.4-1	LANL	X		
PP.4-2	LANL	X		
PP.6-1	LANL		X	
PP.6-2	LANL	X		
PP.6-3	LANL		X	
PP.6-4	LANL	X		
PP.6-5	LANL	X		
WS.3-1	LANL	X		
WS.3-2	LANL	X		
WS.4-1	LANL	X		
WS.4-2	LANL	X		
WS.4-3	LANL	X		
WS.5-1	LANL	X		
WS.5-2	LANL	X		
FP.1-1	LANL		X	
FP.1-2	AL	X		
FP.2-1	LANL		X	
FP.2-2	LAAO			X
FP.2-3	LANL		X	
FP.2-4	LANL		X	
FP.3-1	LANL			X
FP.3-2	LANL			X
FP.3-3	LANL			X
FP.4-1	LANL		X	
FP.4-2	LANL		X	
FP.5-1	LANL		X	
FP.6-1	LAAO		X	
FP.6-2	LAAO			X
FP.6-3	LAAO	X		
FP.6-4	LAAO		X	
FP.6-5	LAAO		X	
FP.6-6	LAAO			X
FP.6-7	LAAO	X		
FP.6-8	LAAO		X	
FP.6-9	LAAO		X	
FP.7-1	LANL	X		
FP.7-2	LANL		X	
FP.7-3	LAAO			X

Concern	Organiz.	Fully	Partially	Not Covered
FP.7-4	LANL			X
FP.7-5	LANL		X	
FP.7-6	DOE-HQ			X
AS.1-1	AL	X		
AS.1-2	LANL	X		
AS.1-3	LANL	X		
AS.1-4	LAAO	X		
AS.1-5	LAAO			X
AS.1-6	LAAO			X
AS.1-7	LAAO			X
AS.2-1	ROSS AV.			X
AS.2-2	ROSS AV.			X
AS.2-3	ROSS AV.			X
AS.3-1	ROSS AV.			X
AS.3-2	ROSS AV.			X
AS.3-3	ROSS AV.			X
AS.3-4	ROSS AV.			X
AS.3-5	ROSS AV.			X
AS.3-6	ROSS AV.			X
ES.1-1	LANL			X
ES.3-1	LANL		X	
ES.3-2	LAAO		X	
ES.3-3	LANL	X		
ES.4-1	LANL	X		
ES.5-1	LANL		X	
ES.5-2	LANL	X		
ES.5-3	LANL		X	
ES.7-1	LANL		X	
ES.7-2	LANL			X
ES.7-3	LANL			X
ES.7-4	LANL	X		

					Totals
Totals	LANL	132	(62%)	60 (28%)	20 (9%)	212
	LAAO	6	(26%)	9 (39%)	8 (35%)	23
	AL	3	(50%)	1 (16%)	2 (34%)	6
	HQ	0	(0%)	0 (0%)	2 (100%)	2

TECHNICAL SAFETY APPRAISAL - TOTAL

LANL	280 (48%)	207 (36%)	92 (16%)	579
LAAO	8 (29%)	10 (36%)	10 (35%)	28
AL	3 (18%)	8 (47%)	6 (35%)	17
HQ	0 (0%)	0 (0%)	1 (100%)	1

ENVIRONMENTAL

RADIATION

Finding	Organiz.	Fully	Partially	Not Covered
RAD-1	LANL		X	
RAD-2	LANL			X
RAD-3	LANL		X	
RAD-4	LANL		X	
RAD-5	LANL			X
RAD-6	LANL			X
RAD-7	LANL	X		
RAD-8	LANL	X		
RAD-9	LANL		X	
RAD-10	LANL	X		
RAD-11	LANL			X
RAD-12	LANL			X
RAD-13	LANL	X		
RAD-14	LANL			X
BMPF-1	LANL		X	
QUALITY ASSURANCE				
QA-1	LANL	X		
QA-2	LANL			X
QA-3	LANL		X	
QA-4	LANL		X	
QA-5	LANL	X		
QA-6	LANL		X	
QA-7	LANL	X		

Finding	Organiz.	Fully	Partially	Not Covered
QA-8	LANL			X
QA-9	LANL			X
QA-10	LANL			X
QA-11	LANL		X	
QA-12	LANL	X		
QA-13	LANL	X		
QA-14	LANL	X		
QA-15	LANL		X	
QA-16	LAAO	X		
BMPF-1	LANL	X		
TOXIC & CHEMICAL MATERIALS				
TCM-1	LANL			X
TCM-2	LANL		X	
TCM-3	LANL			X
TCM-4	LANL			X
TCM-5	LANL		X	
TCM-6	LANL		X	
TCM-7	LANL		X	
TCM-8	LANL			X
TCM-9	LANL		X	
TCM-10	LANL		X	
TCM-11	LANL		X	
TCM-12	LANL		X	
TCM-13	LANL	X		
TCM-14	LANL		X	
BMPF-1	LANL			X

Finding	Organiz.	Fully	Partially	Not Covered
GROUNDWATER, SOIL, SEDIMENT AND BIOTA				
GW-1	LANL		X	
GW-2	LANL	X		
GW-3	LANL	X		
GW-4	LANL	X		
GW-5	LANL	X		
BMPF-1	LANL	X		
BMPF-2	LANL		X	
BMPF-3	LANL	X		
SURFACE WATER				
SW-1	LANL	X		
	AL	X		
SW-2	LANL	X		
	AL	X		
SW-3	LANL		X	
SW-4	LANL		X	
SW-5	LANL	X		
SW-6	LANL			X
SW-7	LANL		X	
SW-8	LANL			X
SW-9	LANL		X	
SW-10	LANL		X	
SW-11	LANL		X	
SW-12	LANL		X	
BMPF-1	LANL		X	
BMPF-2	LANL			X

Finding	Organiz.	Fully	Partially	Not Covered
AIR				
A-1	LANL		X	
A-2	LANL		X	
A-3	LANL		X	
A-4	LANL		X	
A-5	LANL		X	
A-6	LANL		X	
A-7	LANL			X
A-8	LANL			X
NEPA				
NEPA-1	LANL	X		
NEPA-2	LANL	X		
NEPA-3	LANL		X	
NEPA-4	LANL		X	
NEPA-5	LANL	X		
	LAAO	X		
INACTIVE WASTE SITES				
IWS-1	LANL		X	
IWS-2	LANL		X	
IWS-3	LANL			X
IWS-4	LANL			X
IWS-5	LANL		X	
	LAAO		X	
IWS-6	LANL		X	
IWS-7	LANL	X		
	LAAO	X		
IWS-8	LANL			X

Finding	Organiz.	Fully	Partially	Not Covered
IWS-9	LANL			X
IWS-10	LANL			X
IWS-11	LANL			X
IWS-12	LANL			X
BMWP-1	LANL			X
WASTE MANAGEMENT				
WM-1	LANL		X	
WM-2	LANL	X		
WM-3	LANL		X	
WM-4	LANL		X	
WM-5	LANL	X		
WM-6	LANL			X
WM-7	LANL			X
WM-8	LANL		X	
WM-9	LANL			X
WM-10	LANL	X		
WM-11	LAAO			X
WM-12	LANL		X	
WM-13	LANL	X		
WM-14	LANL		X	
WM-15	LANL	X		
WM-16	LANL	X		
WM-17	LANL	X		

Finding	Organiz.	Fully	Partially	Not Covered	
WM-18	LANL		X		
BMPF-1	LANL			X	
					Totals
Totals	LANL	32 (29%)	48 (42%)	32 (29%)	112
	LAAO	3 (50%)	2 (33%)	1 (17%)	6
	AL	2(100%)	0 (0%)	0 (0%)	2

MANAGEMENT AND ORGANIZATION

Finding	Organiz.	Fully	Partially	Not Covered
MF-1	LANL	X		
MF-2	LANL	X		
MF-3	LAAO			X
	AL			X
MF-4	LANL	X		
MF-5	LAAO	X		
MF-6	LANL			X
MF-7	LANL	X		
MF-8	LANL		X	
MF-9	LANL	X		
MF-10	LANL		X	
MF-11	LANL	X		
	LAAO		X	
	AL		X	
MF-12	LANL			X
MF-13	LANL	X		
	LAAO	X		
	AL	X		
MF-14	LANL			X
MF-15	LANL		X	
MF-16	LANL			X
MF-17	AL		X	
MF-18	LAAO			X
MF-19	LANL		X	
MF-20	LANL		X	
MF-21	LANL		X	
MF-22	LAAO		X	
MF-23	LAAO		X	
MF-24	LANL			X
MF-25	LANL			X
MF-26	LANL			X
MF-27	LANL		X	
MF-28	LANL	X		
MF-29	LAAO	X		
MF-30	LANL			X
	LAAO		X	
	AL			X
MF-31	LAAO		X	
	AL			X
MF-32	LANL	X		
MF-33	LANL	X		
MF-34	LANL		X	

					Totals
Totals	LANL	10	(40%)	8 (30%)	8 (30%)	26
	LAAO	3	(30%)	5 (50%)	2 (20%)	10
	AL	1	(17%)	2 (33%)	3 (50%)	6

SELF-ASSESSMENT

Finding	Organiz.	Fully	Partially	Not Covered	
SA-1	LANL		X		
SA-2	LANL		X		
SA-3	LAAO			X	
	AL			X	
SA-4	LANL			X	
SA-5	LANL	X			
SA-6	LANL	X			
SA-7	LANL	X			
SA-8	LAAO	X			
SA-9	LAAO			X	
SA-10	LAAO			X	
SA-11	AL	X			
SA-12	AL		X		
SA-13	AL			X	
SA-14	LAAO			X	
	AL			X	
SA-15	HQ			X	
					Totals
Totals	LANL	3 (50%)	2 (33%)	1 (17%)	6
	LAAO	1 (20%)	0 (0%)	4 (80%)	5
	AL	1 (20%)	1 (20%)	3 (60%)	5
	HQ	0 (0%)	0 (0%)	1 (100%)	1

ORGANIZATION SUMMARY

Summary	LANL		
	Fully	Partially	Not
TSA	280	207	92
Environmental	32	48	32
Management	10	8	8
Self-Assessment	3	2	1
Total	325 (45%)	265 (37%)	133 (18%)723
Summary	LAAO		
TSA	8	10	10
Environmental	3	2	1
Management	3	5	2
Self-Assessment	1	0	4
Total	15 (30%)	17 (35%)	17 (35%) 49
Summary	AL		
TSA	3	8	6
Environmental	2	0	0
Management	1	2	3
Self-Assessment	1	1	3
Total	7 (23%)	11 (37%)	12 (40%) 30
Summary	HQ		
TSA	0	0	1
Environmental	0	0	0
Management	0	0	0
Self-Assessment	0	0	1
Total	0	0	2 (100%)

APPENDIX I

EG&G/ENERGY MEASUREMENTS, INC., LOS ALAMOS OPERATIONS

APPENDIX I
EG&G/Energy Measurements (EM) Los Alamos Operations

FINDING EG&G/BMPF-1: **EG&G Energy Measurements, Inc. (EG&G/EM), Los Alamos Operations - Waste Generation Records**

Performance Objective

DOE 5480.19, "Conduct of Operations Requirements for the DOE Facilities," Paragraph 4, "Policy," requires that the conduct of operations at DOE facilities be managed with a consistent and auditable set of requirements, standards, and responsibilities, and that operators have procedures in place to control the conduct of their operations.

New Mexico Hazardous Waste Management Regulations (NMHWMR) Part II, Section 201, and 40 CFR 260, Resource Conservation and Recovery Act, state that if a facility generates hazardous waste, that facility must comply with 40 CFR Part 262 rules. Among these rules are those requiring proper recordkeeping.

40 CFR 261.5 (a) and (b) define and state the recordkeeping and reporting requirements for a conditionally exempt small quantity generator (a facility which generates < 100 kilograms of hazardous waste per month).

Finding

EG&G/EM/Los Alamos Operations does not have a fully implemented system of documenting waste generation.

Discussion

EG&G/EM Los Alamos Operations (LAO) has determined it is a conditionally exempt small quantity generator of hazardous wastes. This is based on an analysis of wastes generated and by review of hazardous waste manifests. However, EG&G/EM-LAO has not developed adequate records management systems for internal tracking of hazardous wastes generated. While EG&G/EM-LAO has knowledge of the processes that generate wastes, there are no procedures for management of individual waste streams. As a means of implementing formality of operations, the facility should maintain a formal waste management records system which is auditable and can be used to verify compliance with 40 CFR 261.5.

During a meeting on November 4, 1991, EG&G/EM-LAO gave evidence to the Environmental Subteam that it is now maintaining records of hazardous waste generation.