

U.S. Department of Energy
Office of Environment, Safety
and Health



**Tiger Team Assessment
of the
Idaho National Engineering Laboratory
Washington, DC 20585**

MASTER

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5.0

**MANAGEMENT ASSESSMENT
DOE TIGER TEAM ASSESSMENT
IDAHO NATIONAL ENGINEERING LABORATORY**

5.0 Management Assessment

5.0 MANAGEMENT ASSESSMENT

5.1 PURPOSE

The Management Subteam conducted a management assessment of Environment, Safety, and Health (ES&H) programs and their implementation at Idaho National Engineering Laboratory (INEL). The objectives of the assessment were to (1) evaluate the effectiveness of existing management functions and processes in terms of ensuring environmental compliance, and the health and safety of workers and the general public; and (2) identify probable root causes for ES&H findings and concerns.

5.2 SCOPE

Organizations reviewed were DOE-Headquarters; DOE Field Offices, Chicago (CH) and Idaho (ID); Argonne Area Offices, East (AAO-E) and West (AAO-W); Radiological and Environmental Sciences Laboratory (RESL); Argonne National Laboratory (ANL); EG&G Idaho, Inc. (EG&G); Westinghouse Idaho Nuclear Company, Inc. (WINCO); Rockwell-INEL; MK-Ferguson of Idaho Company (MK-FIC); and Protection Technology of Idaho, Inc. (PTI).

The scope of the assessment covered the following ES&H general management issues: corporate policy and culture; organization; planning, budgeting and resource allocation; human resource management; management systems; public and institutional interactions; and DOE oversight. More specifically, these issues included policies and procedures; roles, responsibilities, and authorities; management commitment; communication; staff development, training, and certification; recruitment; compliance management; conduct of operations; emergency planning and preparedness; quality assurance; self assessment; oversight activities; and cost plus award fee processes.

Interviews were conducted with senior, middle, and first-line management; working-level staff at DOE and the INEL contractors; labor union representatives; regulators; and community groups. Documents reviewed included:

- DOE Orders
- ID directives
- the DOE prime contracts with the INEL contractors and ANL
- the INEL Strategic Plan
- INEL and Argonne Institutional Plans
- CH Institutional Appraisals
- policies
- procedures
- manuals
- subcontract formats

- mission and function statements
- implementation plans
- budgeting and financial reports and records
- audit, appraisal, surveillance reports
- self-assessment reports
- job descriptions
- individual performance plans and appraisals
- training materials and records.

5.3 APPROACH

The Management Subteam conducted its assessment in accordance with the Tiger Team Guidance Manual, dated February 1990. The Subteam coordinated with the Environmental, and Safety and Health Subteams to share information and ideas on management issues identified during the Tiger Team Assessment, as well as to identify management issues that might be common to the findings of all subteams. The causal factors identified by all subteams were considered in the evaluation of root causes.

Initially, the Management Subteam developed an understanding of senior management practices, accomplishments, and expectations with respect to INEL management of ES&H activities. This understanding was accomplished through a series of contractor and DOE presentations utilizing the draft Performance Objectives and Criteria for Tiger Team Management Assessments. This was followed by a review of supporting documentation describing the organization, roles, policies, plans, procedures, performance criteria, funding, etc. for ES&H organizational elements, operations, and programs at these organizations. The Subteam conducted numerous interviews to develop an understanding of the management of ES&H activities by the various organizations.

The Subteam's observations were supplemented by information obtained through the Environmental, and Safety and Health Subteams. Preliminary data and conclusions were developed and factually validated through further document reviews and followup discussions with managers and staff at INEL, CH, and DOE-Headquarters.

5.4

MANAGEMENT ASSESSMENT SUMMARY⁽¹⁾

The Idaho National Engineering Laboratory (INEL) presents a significant management challenge. Not only does it occupy 890 square miles, but it uses seven major contractors⁽²⁾ with differing missions under the direction of three U.S. Department of Energy (DOE) Field Offices⁽³⁾ and nine Headquarters Program Senior Officials (PSOs).⁽⁴⁾ This diversity makes it difficult for the DOE Field Office, Idaho (ID) Manager as the INEL Director to manage the laboratory. In addition to organizational diversity, the organization and administration of the INEL programs have been in a state of change with the recent major reorganization of ID, contractor reorganizations, and implementation of the May 1991 SEN-6D-91 (Departmental Organization and Management Arrangements). These recent changes coupled with the complex organization of INEL make management very difficult.

The INEL Management Team takes great pride in their talented staff and in the site's long and distinguished history of scientific, testing, and production accomplishments. A number of INEL scientific endeavors in reactor development and waste management are leading America and perhaps the world. In April 1990, ID commissioned a Management and ES&H review of the INEL to advise INEL Management of the prior Tiger Team findings, and identify ES&H concerns and deficiencies requiring corrective actions. The Management and ES&H review was the foundation for recent improvements at INEL; however, much effort remains to be performed to achieve ES&H excellence.

ID has taken some positive steps to address the Secretary of Energy's call for ES&H excellence by the recent reorganization to ensure independent oversight and to initiate increased line management responsibility for ES&H activities. However, ID and DOE Field Office, Chicago (CH) do not have sufficient qualified Federal technical staff to exercise strong oversight (lack of independent and line oversight) of INEL contractors. Management within ID,

¹ Naval Reactors activities at the INEL and the offsite programs for the West Valley Project Office in New York, Grand Junction Project Office in Colorado, and the Magnetohydrodynamic Project in Montana are outside the scope of this assessment.

² EG&G Idaho; Idaho Nuclear Company, Inc.; MK-Ferguson of Idaho; Protection Technology Idaho, Inc.; Rockwell International; University of Chicago is the contractor for Argonne National Laboratory-West; Westinghouse Electric Company; and Westinghouse Idaho Nuclear Company.

³ DOE Field Office, Idaho; Pittsburgh Naval Reactor; DOE Field Office, Chicago.

⁴ Assistant Secretary, Conservation and Renewable Energy (CE); Assistant Secretary for Defence Programs (DP); Assistant Secretary for Environment, Safety, and Health (EH); Office of Environmental Restoration and Waste Management (EM); Office of Energy Research (ER); Assistant Secretary for Fossil Energy (FE); Assistant Secretary for Nuclear Energy (NE); New Power Reactor; and Civilian Radioactive Waste Management (RW); and many staff PSOs.

CH, and the site contractors is not adequately performing ES&H oversight responsibilities.¹¹ One example of the lack of oversight has been insufficient appraisals of the INEL contractors by both ID and CH. Another example is that during the past 2 years approximately 200 EG&G Idaho technical personnel have been temporarily assigned or permanently transferred to Rocky Flats without formal assessment or approval by DOE. These transfers or assignments of highly trained and dedicated employees to EG&G Rocky Flats have weakened the emerging EG&G Idaho ES&H program.

In addition to the lack of oversight by ID and CH, PSOs have not exercised oversight, except for the DOE-Headquarters Office of Nuclear Energy. Also, differing, and sometimes conflicting, guidance provided by the various PSOs regarding implementation of ES&H requirements has caused confusion, excessive efforts to coordinate, and generally inconsistent approaches.

The Tiger Team identified Category 1 findings at two construction sites. The ES&H aspects of construction activities at the INEL under ID are not adequately controlled by either the construction manager, MK-FIC, site contractors, or ID. In addition to the lack of sufficient staff in the field, ID has not required ES&H standards to be specifically defined or identified for all construction subcontracts and has not uniformly required that subcontractors be capable of meeting specialty requirements such as industrial hygiene, radiation, or hazardous materials. ID depends on the expertise of EG&G Idaho to develop such specialty programs, but does not verify their implementation in a systematic or consistent manner.

ID and the majority of INEL contractors do not place strategic importance on ES&H in their planning, budgeting, and resource allocation processes. The ID strategic planning process does not consider ES&H a strategic issue, does not integrate ES&H into the INEL mission on a sitewide basis, and does not provide the subordinate implementation plans that would define and guide the accomplishment of ES&H and programmatic objectives at INEL. The strategic planning process focuses only on programmatic opportunities that sustain INEL as a DOE facility. Furthermore, with the exception of EG&G and WINCO, the INEL contractors lack strategic plans and subordinate implementation plans that integrate ES&H into their missions and serve as the building blocks of the ID INEL strategic planning process.

CH and ID have no overall office-wide, contractor-wide management integrated information systems to track ES&H commitments and appraisal findings. Tracking systems have been developed by various groups, but reports are not provided to the Field Office Managers. Findings resulting from the activities of the Office of Environment, Safety, and Health (EH) Site Safety Representative (SSR) are not being effectively communicated to the affected contractors, tracked, or resolved by ID. The EH SSRs, who do not have stop work authority, have reported a number of observations of life-threatening construction deficiencies. These deficiencies were reported to ID, but without the immediate cessation of the work, thus submitting workers to a prolonged potential life-threatening situation during the resolution period. In June the Tiger Team identified extensive, serious OSHA violations at the Fuel Processing Restoration construction site, including a Category I

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Key Findings are indicated in bold.

violation and continued use of structures previously identified to be in violation of OSHA requirement. Subsequently, ID and MK-FIC suspended the construction activities.

While all organizations [except for MK-Ferguson of Idaho Company (MK-FIC) and Rockwell-Idaho] have developed policies and procedures dealing with stop work authority (i.e., situations that may involve imminent danger to persons, property, or the environment) these policies and procedures are neither clearly defined nor commonly understood. Only Protection Technology of Idaho, Inc. (PTI) has established appropriate procedures for restarting after using stop work authority, and most organizations do not specifically address environmental insults as a cause for stop work.

Labor relations between the INEL contractors and the principal labor unions are generally harmonious. However, relations between the Oil, Chemical, and Atomic Workers (OCAW) local and EG&G have been characterized by some mutual distrust and adversarial confrontation. While much of this is along traditional labor-management lines, there is a potentially adverse impact on ES&H concerns, and increased effort is necessary to foster trust and confidence between OCAW and EG&G.

Public affairs issues are effectively addressed by the INEL Public Affairs Office, an integrated group of representatives from ID and the INEL contractors, although its effectiveness would be enhanced by greater participation from Argonne National Laboratory-West (ANL-W). Activities and programs include INEL tours, speakers bureau, INEL news, exhibits, public meetings, outreach offices, scholastic tournaments, and information brochures. The Office also maintains a fully effective media relations program that provides regular, timely, and responsive information to the local and national media.

The INEL site enjoys a generally sound and credible relationship with the surrounding community; the public is encouraged to become involved in ES&H issues arising from site activities, and opportunities are taken to explain ES&H issues and their proposed resolution. Principal areas of contention revolve around the disposition of nuclear waste and the proposed New Production Reactor. Opposition has taken the form of public hearings, meetings, and newsletters rather than demonstration and violence.

Continued and intensified efforts by INEL are necessary to restore the trust of the Shoshone-Bannock Tribes. Distrust has arisen from previous interactions in the areas of waste practices and transportation, emergency response planning, and sensitivity to cultural and historical concerns. The situation has been improving recently, mainly due to discussions regarding emergency response planning, but greater openness and interaction are needed.

Relations between INEL and the local, state, and federal regulators have been characterized by cooperation and openness with the exception of the state's contention over transportation and disposition of nuclear waste. The State of Idaho is very concerned about the adequacy of ES&H programs at INEL. Regulators are provided full access to the Site consistent with security rules, and they are, for the most part, provided with timely, accurate, and complete information.

Activities at the INEL are not being performed with the formality and rigor consistent with DOE policy and requirements for the attainment of ES&H excellence. For example, there are significant weaknesses in the implementation of conduct of operations and quality assurance at the INEL. Many policies, procedures, and the expressed expectations of management are not being followed at the working level. A lack of attention to detail, failure to follow procedures, inadequate quality assurance, and inadequate conduct of operations were identified. In some cases, at non-reactor facilities these inadequacies were pervasive. In addition, there is a concern over lack of documentation and traceability of recent Operational Readiness Reviews.

The DOE-operated Radiological and Environmental Sciences Laboratory (RESL) has important national and INEL site responsibilities. RESL conducts the DOE-wide Laboratory Accreditation in dosimetry, bioassay, and whole body radioactivity assay counting; provides radiological and environmental support in emergencies; and provides surveillance of environmental conditions at the INEL. However, independent oversight of RESL's dosimetry accreditation program has not occurred since December 1984, and weaknesses in its quality assurance and conduct of operations place doubt on RESL's effectiveness.

ID has failed to provide the sitewide direction and guidance necessary to ensure an effective, sustainable ES&H program at INEL. ID should be aggressively seeking opportunities to find sitewide resolution to problems and ES&H issues. The contractors bring strong corporate ES&H programs to the INEL that have the potential to promote excellence through variety, but this has led to inconsistent and fragmented activities. For example, there is no standardization of alarms and warning signals, and little integration of emergencies at one site into the plans for other affected sites. Construction oversight, hoisting and rigging practices, lockout/tagout procedures, labels and signage, training, and permitting areas are additional topics where substantially detrimental differences in practices were found.

The ID, CH, and the site contractors are not managing their human resources with sufficient emphasis on ES&H responsibilities. While there are pockets of training excellence, training programs overall throughout the INEL under both ID and CH are fragmented, decentralized, informal, and incomplete. The federal ID training programs are satisfactory.

A requirement has existed for many years that the Field Offices and contractors establish employee concern programs, and for the Field Offices to audit the contractors to ensure compliance. More recently, the Secretary's 10-Point Initiative has resulted in an increased employee awareness of ES&H concerns. It is increasingly important that employee concern programs be operated to effectively assist in shaping the new and vital ES&H culture within DOE and contractor organizations. Moreover, management should use employee concerns as an important source of information in self-assessments and program adequacy. Management must ensure that employee concerns are effectively addressed to show management commitment and to alleviate future adverse interactions with news media and congressional groups. However, the Team did not find effective employee concern programs at the INEL, with the exception of Westinghouse Idaho Nuclear Company, Inc. (WINCO). In addition, a large number of hot-line callers, both federal and contractor, requested anonymity for fear of retribution regarding complaints which were validated by the Tiger Team.

The Management Subteam identified 24 findings and determined two root causes.⁽¹⁾ First, ID has failed to exercise the strong, effective leadership necessary to bring INEL into compliance with DOE's ES&H requirements and to ensure sustained progress towards ES&H excellence. Second, ID, CH, and the site contractors have serious deficiencies in all aspects of the ES&H systems used to control their ES&H programs at the INEL site. Adequate management systems are not in place either in the DOE Field Offices, Headquarters Program Senior Officials, or the INEL contractors to fully implement and monitor the Department's ES&H policies. (See Section 2.3).

As evident in this summary, much effort remains to achieve ES&H excellence. The transfer of responsibility for ANL-W from CH to ID as outlined in SEN-6D-91 should strengthen oversight of the ANL-W programs, but will present a significant set of implementation problems for ID. It is noted that the ID manager must obtain the necessary authority to exercise effective ES&H oversight over ANL-W programs. The Undersecretary has established an Implementation Task Group for SEN-6D-91. The Tiger Team is hopeful that implementation of SEN-6D-91 will significantly reduce the INEL organizational challenge to management, provide clear mechanisms for unifying ES&H guidance from the various PSOs, and clarify DOE responsibilities regarding ANL-W.

5.5 MANAGEMENT FINDINGS

FINDING MF-1 ES&H Oversight

The Department of Energy Field Offices, Idaho and Chicago, have not implemented effective Environment, Safety, and Health oversight programs consistent with the various requirements of DOE Orders and Best Management Practices. Similarly, Idaho National Engineering Laboratory contractors have not implemented effective Environment, Safety, and Health oversight programs consistent with DOE Orders and Best Management Practices.

Discussion

The lack of oversight as identified by the numerous deficiencies listed in the Technical Safety Appraisals (TSA) and Environmental reports support this finding. It is DOE policy that DOE Field Offices and contractors implement effective ES&H oversight programs to ensure compliance with the letter and spirit of applicable ES&H statutes, regulations, and standards. Oversight includes providing line organizations with the necessary guidance for effective ES&H implementation; monitoring performance through document reviews, appraisals, audits, surveillances, and walkdowns; tracking findings; and implementing effective corrective actions. The following deficiencies were found with INEL oversight.

Department of Energy Field Office, Idaho

- ID conducts both functional and management appraisals of INEL contractors. The following deficiencies were noted with the ID implementation of DOE Order 5482.1B:

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The two root causes are indicated in bold.

- ID has not conducted internal appraisals of line organizations (these are scheduled to start this fiscal year).
- ID's Office of Environmental, Safety, and Health Oversight (OESHO) Oversight Manual requires that functional appraisals be conducted on a 2-year frequency. ID has not, however, achieved this. The frequency of appraisals conducted by the Safety Division ranges from 2 to 5-years. The Industrial Hygiene, Industrial Safety, and Fire Protection appraisals of the Radiological & Environmental Sciences Laboratory were last conducted in 1986. Only one environmental protection appraisal of INEL contractors was conducted (PTI--May 1991) since 1988. No environmental protection appraisals have ever been conducted of Rockwell and MK-FIC.
- ID is not following DOE Order 5482.1B in closing out appraisals "expeditiously." The following information came from spot checks of several appraisals and are examples of this:

In December 1988, ID conducted a Radiological Safety Functional Appraisal of EG&G. On December 18, 1989, EG&G notified ID of the corrective actions they had taken and requested that the 1988 functional appraisal be closed. ID has taken no action to close this appraisal.

ID conducted a Nuclear Facilities Safety Functional Appraisal of EG&G in August 1990. November 1, 1990, EG&G advised ID that corrective actions had been completed on three recommendations and requested closure of these items. ID has not responded to this letter.

On April 26, 1990, WINCO requested closure of three findings from the 1986 and 1989 Radiation Protection Functional Appraisals. The letter identified the corrective actions taken. ID has taken no action to close these findings.

MK-FIC and Rockwell reported in interviews that they had sent ID information on corrective actions for appraisal findings several times and requested that the appraisals be closed, but have never received a response to their letters.

- Until the formation of OESHO in October 1990, the responsibility for closing appraisals resided with the appraising organizations (Safety and Environmental and Quality Assurance Divisions). Generally, their procedure was to close appraisal findings at the time of the next similar appraisal. Since last October, line management has been assigned the responsibility for both tracking and closing functional appraisals. These organizations are just now starting to track new appraisals and develop closure procedures. More than 40 appraisals conducted prior to October 1990 have not been closed even though corrective actions have been completed for many of the findings. None

of these appraisals are presently being tracked anywhere within ID.

- Prior to the Tiger Team, ID was not requiring contractors to submit quarterly appraisal status reports as directed by DOE Order 5482.1B. On July 1, 1991, ID wrote a letter to INEL contractors requiring them to start submitting the quarterly reports in response to a Tiger Team observation.
- ID is not providing contractors with appraisal reports within 30 days of the appraisal as required by DOE Order 5482.1B. Based on the review of 16 appraisals, reports were issued an average of 58 days after the appraisal.
- ID line organizations and OESHO perform ES&H surveillance and walkdowns of contractor operations. They have not, however, been able to achieve the number of surveillance and walkdowns required by the various organization manuals. Each Branch has its own system for tracking appraisal and surveillance findings. However, reports on both the findings and the status of corrective actions are seldom provided to management above the Branch Chief.
- The ID Environmental Compliance Branch conducted a surveillance of MK-FIC on April 18, 1991. The report shows no findings. However, under observations the report states that "the operating contractor conducts environmental surveillances before construction begins and after construction is finished, but not during the actual construction phase of the project. Surveillances are performed by MK-FIC safety during construction, but not by trained environmental protection personnel...." This is a significant issue that should have been listed as a finding and reported to ID management to initiate followup action particularly since the Tiger Team subsequently identified Category I findings at two MK-FIC construction sites.
- All of the ID Environment & Quality Assurance Division (EQAD) personnel are not allowed access to the Specific Manufacturing Capability (SMC) facilities to conduct environmental surveillances and other oversight functions. The U.S. Army requires individuals to sign a certificate recognizing that they are subject to random polygraph testing as a condition to access. Only three of the EQAD staff have been willing to do this. It should be noted, however, that the ID SMC Project Manager has granted EQAD a ceiling of only three people for SMC clearance because of security reasons. These EQAD employees have specific areas of expertise such as the Clean Air Act or the Clean Water Act, and they are not qualified to perform document reviews, surveillance, or appraisal functions in other compliance areas. Therefore, ID is deficient in performing environmental compliance oversight of the SMC. In a memorandum to the ID SMC Project Office Manager, dated May 14, 1991, the EQAD Director identified that having only three people from his staff cleared for access to the SMC is "considered insufficient for comprehensive surveillance activities in SMC production areas." ID management has neither recognized the

importance of this nor has taken appropriate action to ensure adequate independent environmental compliance oversight of the SMC.

- ID is not adequately monitoring environmental permits received from the State of Idaho to ensure compliance with permit requirements. This observation is supported by Environmental Findings A/CF 12 (Section 3.5.1) and SW/CF 4 (Section 3.5.3). Environmental permits for INEL operations are obtained by the Site Engineering and Support office. Permit monitoring and the submission of required compliance reports are responsibilities of line management. These functions are not being performed satisfactorily, which could result in fines and shutdown of operations.
- ID has not taken prompt action in conducting required document reviews. Examples include:
 - The Hazardous Materials Transportation Manual prepared by EG&G is not adequate and has not been reviewed by ID as required by DOE Order 5480.19. (See Section 4.5.3, Concern PT.4-2.)
 - ID has not taken prompt action in reviewing and approving contractor quality assurance (QA) plans. (See Section 4.5.3, Concerns QV 1-2 and 1-9.) MK-FIC submitted their QA plan to ID for approval April 2, 1990, and the PTI plan was submitted April 4, 1991. No action has as yet been taken on either plan.

Department of Energy Field Office, Chicago

- There is no evidence that internal oversight surveillance or appraisals have been performed of the Argonne Area Office-West (AAO-W) by either the CH ES&H Division or the Argonne Area Office (AAO). DOE Order 5482.1B requires that appraisals be performed of DOE and contractor activities with sufficient scope and frequency to ensure effectiveness of the ES&H activities. CH recently (May 17, 1991) reissued its Functional Appraisal System Order, CH Order 5000.1b. However, the Order is deficient in that its scope applies only to functional appraisals of contractors and does not include CH line organizations.
- An example of the significant lack of internal ES&H oversight can be found in ANL-W's operation of Experimental Breeder Reactor-II (EBR-II). ANL-W has formed an Experiment Safety Review Group (ESRG) that conducts safety reviews of all proposed EBR-II experiments. From September 26, 1989, to June 1, 1991, 28 new EBR-II experiments were reviewed by the ESRG. However, no environmental compliance reviews were made. AAO-W conducts regular ES&H surveillances of ANL-W EBR-II operations. AAO-W, however, does not look at the ANL-W's review procedures for EBR-II experiments because no mention is made of the environmental review problem in the surveillance reports. CH conducted an Environmental Protection Functional Appraisal of ANL-W in March 1990, but the appraisal did not include ANL-W's ES&H review procedure at EBR-II. No mention is made in the appraisal report of the lack of environmental reviews of EBR-II experiments.
- CH is not adequately providing guidance and reviewing documents at ANL-W. Examples include:
 - CH has not provided adequate guidance for designating "nuclear facilities" and hazard classes consistent with DOE Orders 5480.5 and 5481.1B. (See Section 4.5.2, Concern OP.3.3.)
 - Many of ANL-W documents are out of date and there is no overview function to ensure that procedures and manuals are expeditiously reviewed or updated as required by DOE Order 5480.19. (See Section 4.5.2, Concern OA.7-1.)
 - Also as mentioned above, CH has not reviewed the ES&H review procedures for EBR-II experiments to ensure that adequate environmental reviews occur.

ID and CH have not yet reached the point where there are sufficient Federal technical qualified personnel to exercise strong oversight (lack of independent and line oversight) toward the INEL contractors.

Argonne National Laboratory-West

- ANL-W does not conduct environmental reviews of new experiments at EBR-II. ANL-W has formed an ESRG that serves as a recommending body to the EBR-II Division Director on safety-related proposals

that are referred to the group. The Experimenter's Guide specifies that the ESRG conducts safety reviews of all proposed EBR-II experiments. From September 26, 1989, to June 1, 1991, the ESRG conducted reviews for 28 new EBR-II experiments. However, no environmental compliance reviews were made. In addition, no quality assurance (QA) audit has been performed on the ESRG to provide that independent oversight function either.

- ANL-W is not conducting environmental and waste management surveillances. Industrial safety, industrial hygiene, health physics, and fire protection surveillances are conducted on a regular basis by ANL-W. Procedures for these surveillances are contained in the ANL-W ES&H manual. Procedures for environmental and waste management surveillances are lacking.
- ANL ES&H and Quality Assurance office is in the process of implementing an ES&H appraisal program. Appraisals will be scheduled on a 2-year cycle. Draft procedures, which will be incorporated into the ANL ES&H manual, have been developed. Only a Radiological Safety Appraisal has been performed at ANL-W to date. No other formal ES&H oversight is conducted by ANL of ANL-W operations. ANL-W site support division has an ES&H Department, but the department does not perform oversight of ANL-W. Its function is to provide ES&H support upon request.

EG&G Idaho, Inc.

The EG&G independent oversight program has elements with potential conflict of interest. The EG&G Environment Safety and Quality Division performs environmental oversight of line organizations, and the Division has implementors and auditors of certain parts of the environmental program who are the same individuals or who report to the same manager. This organization also has responsibility for permitting and NEPA documentation, both of which require oversight but which is not provided independently. Thus, there is a potential conflict of interest. There is also a deficiency with independence at the Test Reactor Area (TRA). Safety and operation reviews of the Power Reactor Programs are performed by the Safety and Operations Review Committee. Three members of this committee, which includes the Chairman, come from the Power Reactor Programs. This situation also is a potential conflict of interest.

Morrison Knudsen-Ferguson of Idaho Company

MK-FIC does not have an appraisal program that meets the requirements of DOE Order 5482.1B and ID Order 5482.1A. They perform Safety and Health (S&H) surveillance and audits on single areas of concern, but not functional appraisals. Prior to the Tiger Team, MK-FIC had never conducted an environmental surveillance of any of their operations. The MK-FIC Environment Safety and Health Plan (ES&H Manual) is very weak in the area of environmental compliance. Environmental compliance occupies one page and does not discuss oversight.

Protection Technology of Idaho, Inc.

PTI does not have an appraisal program that meets the requirements of DOE Order 5482.1B and ID Order 5482.1A. PTI is performing inspections on single areas of concern, such as hazardous waste accumulation, but is not performing functional appraisals. PTI has brought in consultants for some appraisals (i.e., fire safety, etc.).

Rockwell-INEL

Rockwell-INEL does not have an appraisal program that meets the requirements of DOE Order 5482.1B and ID Order 5482.1A. Rockwell-INEL performs walkdowns, surveillances, and assessments but not functional appraisals. The assessments are conducted on a 3-year cycle and assess a specific area of concern, such as compliance with the Clean Air Act. All assessments (safety, fire protection, Industrial Hygiene, environmental protection, etc.) are performed by a 3-person audit staff. It is questionable that this small staff is qualified in all of the assessment areas. There is also a potential "conflict of interest" since the Compliance Assessment and Environment organization performs environmental oversight of line management, but also has responsibility for permitting and NEPA documentation, both of which require oversight reviews.

The Independent Safety Review Committee (ISRC) is chartered by QA 14.2.1 to conduct independent ES&H reviews of SMC operations, facilities, activities, security, and reports. However, the ISRC does not perform independent ES&H reviews of all of the above operations, but only responds to requests as stated by the chairman. A review of the ISRC activity log containing submittals to the ISRC since January 14, 1991, shows a broad spectrum of items reviewed. Response for each issue is timely. However, a request to review CAP 8.2.8, Conduct of Operations, was declined with the comment that ISRC review was not required because this is a line management function. The ISRC review would not be independent if ISRC prescribed requirements for the procedure as a result of such a review.

Westinghouse Idaho Nuclear Company

WINCO recently implemented ES&H assessment programs that meet the requirements of DOE Order 5482.1B and ID Order 5482.1A. The assessments will be conducted on a 3-year frequency. However, the WINCO Environmental Compliance Department, which is in charge of the assessment program, has no other formal environmental surveillance or review program to monitor compliance between assessments. This concern may be partially addressed by QA audits conducted by the Quality Assurance Department. The QA audits would not, however, look at specific areas of environmental compliance in enough detail to be considered adequate. Also, WINCO has not been monitoring environmental permits to ensure compliance with the permit requirements. This function will soon be assigned to the Environmental Permitting & Regulations Section.

Self-Assessment

Department of Energy Field Office, Idaho

The ID self-assessment identifies that the frequency of appraisals is inadequate and that ID lacks the capability to track corrective findings

(assume this refers to appraisal findings). However, there is no mention of the following:

- Lack of reports to management on the status of surveillance and appraisal findings.
- Inadequacy in closure of appraisal findings.
- Access problem at SMC for environmental compliance oversight.

Department of Energy Field Office, Chicago

CH identifies that oversight is inadequate; however, CH does not mention that surveillance and appraisals do not assess the review criteria for EBR-II operations.

Argonne National Laboratory-West

The self-assessment identifies the inadequacy of internal oversight and tracking of ES&H corrective actions. No mention is made of the lack of environmental compliance reviews for EBR-II experiments.

EG&G Idaho, Inc.

No mention is made in the EG&G self-assessment of the lack of independent oversight.

Morrison Knudsen-Ferguson of Idaho Company

The self-assessment identifies the lack of qualified environmental staff but does not mention the need for a functional appraisal program.

Protection Technology of Idaho, Inc.

The self-assessment does not identify the lack of an appraisal program.

Rockwell-INEL

The self-assessment does not mention the lack of an appraisal program or the independent oversight concern.

Westinghouse Idaho Nuclear Company

No mention is made in the WINCO self-assessment of the lack of inadequate monitoring of environmental permits.

FINDING MF-2 Program Senior Official Oversight

The Headquarters-Department of Energy Program Senior Officials have not yet implemented effective Environment, Safety, and Health oversight programs of their own, their subordinate organizations, and their contractors.

Discussion

Line program management has always been responsible for program accomplishment within budget, on schedule, with the desired quality, and in full compliance with applicable ES&H requirements. In recent years, the increased emphasis on ES&H has made the role of the line program managers increasingly important with regard to ES&H, for embodied in this position are the prioritization, allocation, and control of resources and the authority for decision-making that are essential for the effective realization of ES&H objectives of a program. Therefore, the activities of the DOE-HQ Program Senior Official (PSO) are of increasing importance to the success of the field operational ES&H programs. The ES&H guidance provided, the management systems used, the priorities established, and the resources made available determine the degree of success of these field ES&H efforts. The Management Subteam assessed the status of ES&H oversight of INEL by the Office of Energy Research (ER); Assistant Secretary for Environment, Safety and Health (EH); Assistant Secretary for Nuclear Energy (NE); the Office of Environmental Restoration and Waste Management (EM); and the Assistant Secretary for Defense Programs (DP). The following summarizes the current status of ES&H oversight common to the PSOs:

- The realignment of field office reporting relationships resulting from SEN-6D-91 will require the development of well-defined roles, responsibilities, and authorities between the various PSOs and the Lead PSO for the various multiprogram sites. These will be codified in Memoranda of Agreements (MOAs) between the various PSOs. A Task Force, Chaired by the Under Secretary, has established seven Working Groups to coordinate activities resulting from the SEN-6D-91 initiatives, including one dealing with MOAs. A universal Landlord/PSO MOA supplemented by PSO/Field Office MOAs for specific programmatic implementation would result in the minimum number of MOAs; ensure consistency; define roles, responsibilities, and authorities; and provide specific program guidance and control where necessary.
- While all the PSOs recognize that the budget guidance provided for ES&H is inadequate, generic in nature, and provides little basis for effective ES&H planning or prioritizing, formal actions to correct this situation have not been taken.
- The only consistently applied system currently in use to prioritize ES&H budget needs is based on the Tiger Team criteria. This system is too coarse a mesh for prioritizing the large number of ES&H needs. In addition, PSOs are not prioritizing across their activities but rather on a site-by-site basis. This is partly the result of concerns that certain programs have drained resources from the other sites (e.g., Rocky Flats and Savannah River Site from other DP sites).
- Independent and line ES&H staff resources appear woefully inadequate. Even where the ceiling is authorized, hiring has been slow; as a result, many positions remain vacant. As a consequence, many of the PSO oversight activities are not being performed to the degree desirable. The resource problem will be further exacerbated as many of the PSO oversight programs broaden their scopes to include all ES&H activities (e.g., see NE below).

- Self-assessment is not consistently interpreted by the PSOs, and self-assessment activities are still in the formative stage. Few PSOs have reviewed Field Office and contractor self-assessments.
- PSOs are involved in the Cost Plus Award Fee process in the initial and final steps (criteria establishment and fee determination) but have very little involvement during the interim stages. All agree that more involvement is necessary to ensure proper guidance and monitoring of contractor performance.

The following summarizes PSO-specific ES&H oversight issues:

DP

- New mission statements are in place that reflect the responsibilities of the April 1991 reorganization. DP has instigated a process to rely on dedicated personnel at the sites and to maintain close contacts between them and DP-6. Program divisions provide specifications and requirements and are responsible for safety documents for new systems and processes (e.g., Safety Analysis Reports). DP-6 is responsible for day-to-day operations and, therefore, operational ES&H. Budget guidance/priorities are derived jointly by the Program Office and the Facilities Office. DP-6 has recently established the following: an Office of Inspection (DP-67) to provide inspection guidance and to perform independent appraisal of line program offices, an Office of Engineering & Operations Support (DP-62) to provide a pool of resident technical experts for the program offices, and program operational offices (DP-64 & 65) that act as program managers and provide line oversight through their Site Action Teams. However, oversight is not a planned process. DP envisions its role to involve oversight of the Field Office and contractors, but not its line organizations, and to perform self-assessments of these subordinate organizations. Currently, DP believes resources limit accomplishment of its oversight objectives.

The Office of Nuclear Self-Assessment & Emergency Management (DP-2.2), while giving the appearance of organizational independence, is in actual performance of its ES&H activities, subordinate to the program offices.

EM

- The Office of Quality Assurance and Quality Control (EM-20) has responsibility for internal independent oversight within EM. This role includes overseeing the EM self-assessment process, developing oversight policy, and conducting appraisals of the EM line management organization as directed. EM-20 is beginning to formalize its roles, responsibilities, and authorities; it has developed a draft EM Self-Assessment Mission Plan and Charter, a draft Self-Assessment Program Management Plan, and a draft Guidance for Conducting Evaluations of Self-Assessment Programs of Subtier Organizations. Currently, EM-20 conducts appraisals of EM line, field office, and contractor activities as directed, and provides a report to EM-1. There is no process for closure of audit findings. Currently, the effectiveness of EM oversight is limited by the lack of institutional oversight programs (most plans are in draft form) and a lack of resources. EM-20 has 22

full-time employees (FTEs) on board with an FY 1992 authorization of about 30 FTEs, and an FY 1993 authorization of 48 FTEs.

NE • NE-47 continues to be proactive regarding ES&H oversight; NE has MOAs with many of their Field Offices already in place, and a draft MOA for NE and ID has been prepared. NE has not as yet prepared a Self-Assessment; they did review the AAO-W Self Assessment but not the CH Self-Assessment. NE continues to perform historical oversight in the nuclear safety area but has not begun an effective oversight of safety or environmental areas. NE-80 recognizes this shortcoming and is modifying its mission statement to reflect these added responsibilities. NE-80 currently has only reached half of its 39 authorized FTE ceiling and will need additional authorized ceiling to implement the expanded oversight role it has defined. NE-80's resource requirements are further exacerbated by the need to assist the line organizations (except for NE-47) to carry out their oversight activities. NE-80 appraisals, which are conducted on a risk priority basis, are done without acceptance criteria (protocols). NE plans to prepare protocols in the future.

Self-Assessment

No self-assessments have been prepared by the PSOs.

FINDING MF-3 Environment, Safety, and Health Professional Staff

The Department of Energy Field Office, Idaho, has not given sufficient priority to acquiring the necessary Environment, Safety, and Health professional staff required to carry out its Environment, Safety, and Health oversight responsibilities.

Discussion

DOE and ID entered a renaissance in 1989 which continues today. The Secretary of Energy's 10-Point Initiative set a new course for DOE, one which mandates an ES&H priority over production. Subsequent Secretary of Energy Notices (SENs) provided additional clarification to this mandate: Line management responsibility for ES&H (SEN-6-89); Recruitment, Technical Training and Professional Staff Development (SEN-6B-90); Line Management's Responsibility to Achieve Environmental Compliance (SEN-7-89 and SEN-7A-90); and Setting the new DOE Course (SEN-11-89) to name a few of the more applicable directives. In this same period, ID realized that it did not possess the resources (e.g., people, skill, experience base) to provide adequate oversight of seven contractors, their 12,000 to 14,000 employees, and the INEL research and development (R&D) and production programs. Thus, ID began a transformation to strengthen its technical manpower resources, but one that does not reflect the Secretary's priorities.

From 1989 to the present (July 1991), ID full-time permanent staff increased by 71 people, to a current level of 424 people. During this same period, 225 people were hired, most to account for staff attrition. During this window of opportunity to change the ID skill mix to reflect DOE priorities, only 26 (approximately 10%) of the new hire staff additions were ES&H professionals; 6 are in the Office of Environmental Safety and Health Oversight (OESHO), which management concedes is still understaffed, and 20 were hired for ES&H line management in the program offices. The remaining new hires (102) were technical staff for the program offices including the Environmental Restoration and Waste Management (ERWM) Office, and non-technical positions (97). Thus, while ID was increasing its technical staff from 29% (1990) to 39% (1991) by acquiring 92 professionals to improve technical oversight of contractor programmatic activities, the OESHO and its ES&H companion and predecessor organizations added only 6 professionals from outside hires.

The current staffing situation of OESHO provides a poignant example of the low priority placed on ES&H oversight by ID. OESHO currently has two vacant positions within its authorized ceiling: the Quality Assurance Branch Chief and a health physicist in the Environmental Branch. In addition, management confirms that the following positions are "needed and requested, but not currently authorized" (representing a 40% needed increase in professional staff): two nuclear engineers and a fire protection engineer in the Nuclear Safety Branch, an environmental engineer in the Environmental Compliance Branch, a QA specialist in the Quality Assurance Branch, and two safety engineers and a safety specialist in the Occupational Safety Branch. This last example in the Occupational Safety Branch is a most important example of the low priority ID places on ES&H oversight; the Branch does not have a safety engineer and a position is not authorized, in spite of the fact that the Line Program Organizations continue to recruit and hire technical staff. The serious understaffing of OESHO is also noted elsewhere in the assessment,

for example: "The Independent QA organizations at comparable DOE sites have authorized staffs at least 50 percent larger." (See MF-15).

Self-Assessment

The ID partially addresses this issue; it recognizes that OESHO is severely understaffed.

FINDING MF-4 Organizational Roles, Responsibilities, and Authorities of the Department of Energy Field Office, Idaho

The Department of Energy Field Office, Idaho, Environment, Safety, and Health independent oversight responsibility is not consistently assigned, and some organizational interfaces are poorly defined.

Discussion

ID roles, responsibilities, and authorities are well defined in ID Order 1120.A3; however, the horizontal interfaces between organizations are not well defined or uniformly understood. A number of ES&H-related activities involve several ID organizations that require further definition such as discussed in the following paragraphs.

In the area of Quality Assurance (QA), ID Order 1120.A3 assigns to OESHO the responsibility to develop ID QA policy and independently review QA performance. OESHO is responsible for developing ID QA Supplemental Orders that define how ID contractors and ID organizations are to implement their QA programs. OESHO is in the process of developing ID's Quality Assurance Plan (QAP) to be used by the ID line program offices in developing their Quality Program Plans (QPPs). The line program offices are assigned authority for approval of their contractors' QAP (also approved by the ID Manager) and QPPs. No one is assigned responsibility for approval of the line organizations' QPPs, and currently all line organizations believe this responsibility is within their authority, which would be inconsistent with QA practice. (See Finding MF-16.) ID Order 1120.A3 assigns OESHO "concurrence authority for key documents in environmental protection"; however, interviews indicate that not all these documents are sent to OESHO for concurrence before submission to outside agencies. In addition, the NEPA Compliance Officer (NCO) is located in the Assistant Manager for Site Engineering and Support (AMSES) organization that provides technical support to the line program offices. When this support is provided to the line program offices by the NCO, there is no longer any independent oversight of these matters since they are not reviewed by the OESHO. (See Finding MF-8.)

None of the line program organizations have a clear understanding of how OESHO oversight reports are to be processed to the contractor for action. While this might be explained by the recent organizational changes, they were equally unsure of past practices. All line program offices believe that OESHO appraisal reports are forwarded through them for concurrence prior to signature by the manager. This practice gives the appearance of undermining the independence of the OESHO reviews. They all had different views of how conflicts between OESHO and themselves would be resolved other than informally. All line program offices agreed that they were responsible for closure of findings. Only the Assistant Manager of Energy Programs indicated that he would not close a finding from an external source (e.g., OESHO)

without checking with the external source. There is no documentation of the procedures to be followed to resolve conflicts or to process reports.

Although OESHO is assigned the ID independent oversight role, there are some aspects that are not consistent with this assignment:

- OESHO is responsible for developing ID ES&H policy but is not involved in the concurrence of implementation plans prepared by the contractor. This responsibility is assigned to the line program offices who may not fully understand the requirements, and considering their program responsibilities, may not provide the degree of objectivity needed.
- OESHO performs independent oversight of contractors and program offices but does not approve contractor or program Corrective Action Plans (CAPs) or validate closure of findings. These responsibilities are assigned to the line program offices. The OESHO may spot-check CAPS and closure but generally waits until the next audit (as long as 5 years) to determine the adequacy of the corrective action. Generally, accepted audit practice is for the original auditor to be involved in these acceptances and to expeditiously approve them to prevent unacceptable practices to prevail for long periods of time.
- OESHO is responsible for independent review of safety documents (e.g., Safety Analysis Reports) but not for all environmental documents (e.g., NEPA documents as discussed above).
- OESHO is responsible for independent QA of ID, but approval of ID QA Plans is done by each organizational unit.
- OESHO does not receive DOE-HQ program office guidance or participate in the full budget review process, although the Manager of OESHO is a member of the ID Planning Board that reviews General Plant Project and line item construction proposals. With the increased emphasis by PSOs on ES&H, it is important for the OESHO to participate in the budget formulation process and to receive the budget guidance provided by the PSOs.

Self-Assessment

The ID self-assessment did not identify this finding.

FINDING MF-5 Strategic Planning

Department of Energy Field Office, Idaho, and most INEL contractors do not have sitewide strategic planning processes with subordinate implementation planning that integrate Environment, Safety, and Health into their overall missions to define, guide, and accomplish Environment, Safety, and Health and programmatic objectives at Idaho National Engineering Laboratory.

Discussion

Long-range ES&H planning has been conducted by INEL for a number of years and continues today. The INEL Institutional Plans (e.g., FY 1987-1992, through FY 1989-1994) testify to INEL's recognition of the importance of ES&H even before the Secretary of Energy's mandate for ES&H priority over production. In fact, INEL's ES&H heritage and current vision can be traced back several decades through its management of the Atomic Energy Commission, U.S. Nuclear Regulatory Commission, and Nuclear Navy Programs. However, in spite of this early recognition of the importance of long-range planning and the Secretary's mandate to place a high priority on ES&H and on Strategic Planning (SEN-25-90), neither ID nor the majority of its contractors have integrated sitewide strategic plans with subordinate implementation plans to define and guide the accomplishment of ES&H and programmatic objectives.

Department of Energy Field Office, Idaho

ID manages the operations of eight major facilities on the 890-square-mile INEL Reservation for nine Headquarters organizations and other government agencies. ID accomplishes this mission by monitoring and overseeing the activities of three Management and Operation (M&O) and two support service contractors. To successfully carry out its current landlord responsibilities and programmatic oversight while ensuring that these INEL assets are available to serve the nation's future interests, ID and its contractors must conduct thoughtful, coordinated planning. The INEL strategic planning process should be founded on the strategic plans of its contractor and should reflect DOE priorities and visions. Furthermore, the programmatic complexity of the INEL must be integrated with the Secretary of Energy's mandate that ES&H activities are an integral and high-priority element of the planning process if ID is to meet its current and future responsibilities to the Department. Currently, the INEL planning process falls far short of these expectations and most importantly does not consider ES&H as a strategic issue.

ID has established an INEL strategic planning process that involves senior management and staff from ID and several of INEL contractors. The planning process is managed by a Strategic Planning Council, led by the Manager of ID, and composed of senior ID staff and the Presidents of most M&O contractors, but MK-FIC and PTI are not represented. Strategic Planning Units (SPU) also composed of ID and contractor personnel are assigned responsibility for developing strategic technical initiatives such as Energy, Defense Technology, and Environmental Issues. The results of this planning process are formalized in a document entitled Strategic Plan, August 1990 (DOE/ID 10209).

This strategic plan falls far short of a strategic plan that integrates ES&H into the INEL mission. The Strategic Plan (DOE/ID 10209) is a high-level document that more closely resembles a strategic business plan rather than an INEL Strategic Plan, which recognizes the priority and relationship of ES&H

objectives within the INEL mission. Even the Strategic Planning Unit devoted to Environmental Issues focuses only on R&D-related activities rather than the relationship of Environmental Issues to the strategic technical issues. As a consequence, subordinate implementation plans to guide the accomplishment of INEL ES&H objectives, which would be founded on and flow from such a plan, do not exist.

There are a number of additional shortcomings of the INEL strategic planning process. There is a short planning horizon as reflected by the SPU milestones; a period from July 1989 to July 1990 with little detail beyond. This is more appropriate for a tactical planning process rather than for strategic planning aimed at forecasting long-term ES&H requirements (e.g., staffing, training, NEPA) within the overall INEL mission. In addition, ID does not recognize the vital role the strategic planning process of its contractors could play in the INEL planning process; it has not required similar planning of its contractors. These plans are the basis for the integrated INEL strategic planning process. Furthermore, the INEL strategic planning process does not include all INEL contractors who must anticipate ES&H-related needs on a sitewide basis. PTI and MK-FIC have minimal involvement in the INEL planning process.

ID is currently revising and enhancing the strategic planning process. The Field Office Planning Handbook (Draft July 15, 1991) and the INEL Strategic Planning Process Review and Recommendations Document, dated July 17, 1991, provide additional detail on the evolving INEL Strategic Planning Process. For example, the process accommodates the establishment of integrated INEL-wide strategic objectives. However, the Documents, which appear to be early drafts, do not address if and how ES&H as a strategic issue will be integrated into the planning process.

Argonne National Laboratory-West

The principal or highest level planning document for the ANL-W facility is the Argonne National Laboratory Institutional Plan. Other subordinate plans flow from this planning document. A comparison of the Draft Institutional Plan FY 1992--FY 1997 with earlier Institutional Plans serves as evidence that ANL has placed increased emphasis on ES&H planning over the past year. However ES&H planning is not yet an integral part of the programmatic strategic planning process. Consequently, subordinate implementation plans are not in place to translate ANL-W's strategic vision for ES&H compliance into a reality.

Currently, ANL planning remains fragmented and incomplete. For example, the relationships between the strategic planning for DOE Nuclear Programs, ES&H, and site and facilities at ANL-W are not evident. Furthermore, sitewide subordinate implementation plans (e.g., training, management systems development) that would flow from such an integrated planning process do not exist. Instead, ANL appends annual implementation plans to the programmatic plans.

A further example of the fragmented and incomplete nature of ANL planning process is the EBR-II Division Management Plan. The Draft Institutional Plan does not relate EBR-II planning to ES&H or site and facility planning at ANL-W. Furthermore, the EBR-II Division Management Plan (approved on June 14, 1991), while a useful policy and management guidance document, does

not provide detailed implementation plans to guide the accomplishment of ES&H activities at ANL-W. In the absence of such implementation plans, it is not possible to assess management's priorities for addressing vital ES&H-related activities (e.g., training, human resource allocation, procedure development).

EG&G Idaho, Inc.

EG&G has been taking a disciplined approach to strategic planning for its INEL activities for the past 2 years. The strategic planning for 5 years incorporates ES&H into the earliest planning stages. The 5-year operational plans of each Department are the basis of the six-quarter plans of each Division. These detailed six-quarter plans guide the programmatic, institutional, or ES&H-related activities in such areas as staff recruiting and training and management systems development. Progress against these implementation plans is monitored each month by EG&G Senior Management. Finally, EG&G corporate management reviews the plan as well as progress in meeting the key Plan's milestones.

Rockwell-INEL

Rockwell-INEL lacks a sitewide strategic plan that translates their vision for incorporating ES&H implementation into its mission and for implementing the mission as an integral part of the overall INEL mission. Since such a strategic plan, with subordinate implementation plans, does not exist, it is impossible to assess the Rockwell-INEL strategy for balancing ES&H requirements for resources, staff acquisition, training and certification, and capital improvements against the long-term goals of the mission at each site and at INEL. Since Rockwell-INEL will soon be replaced as the M&O Contractor, the new contractor will be faced with defining the future course of the SMC mission.

Protection Technology of Idaho, Inc. and Morrison Knudsen-Ferguson of Idaho Company

The PTI and MK-FIC planning processes are currently subordinate to other planning activities at INEL. MK-FIC provides construction support that is required by other INEL contractors; MK-FIC bases their planning on the detailed 2-year and 5-year plans of the INEL operating contractors. The S&H subteam found "There are no formal long range staffing plans." Similarly, PTI's planning process is driven by the sitewide security requirements of INEL as forecast by DOE and its M&O contractors. Currently, neither MK-FIC nor PTI is active in the INEL planning process. However, the changing DOE requirements and INEL mission as reflected in the INEL strategic planning process will impact MK-FIC and PTI's future requirements. Thus, they should be active participants in the planning process.

Westinghouse Idaho Nuclear Company

WINCO has developed a sitewide strategic plan that translates management's vision for incorporating ES&H implementation into the WINCO. The annual "ICPP Multiple Fuels Processing Program" document details a 48-year strategy that considers ES&H issues as an integral and high-priority programmatic issue. This strategic plan, with subordinate implementation plans, provides Westinghouse with a basis for balancing ES&H requirements for resources, staff

acquisition, training and certification, and capital improvements against the long-term goals of the WINCO and INEL missions.

In addition, Westinghouse has a number of corporate-wide strategic planning activities under way that benefit the WINCO and INEL mission. Westinghouse, the WINCO parent company, has 16 Cross-Cultivation Committees composed of staff members from its various government-owned, contractor-operated (GOCO) operations. These committees have been established for the express purpose of "creating a formal network among our six sites to generate ideas, enhance technological expertise, motivate people, exchange and build on experience, solve problems and lower costs" (Westinghouse Strategic Commitment to Department of Energy Operations, Draft version, May 1991). The 16 Cross-Cultivation Committees are focused primarily toward important ES&H-related activities (e.g., Environmental, Industrial Hygiene and Safety, Training, Radiation Health Protection).

Self-Assessment

ID and INEL contractor self-assessments do not address this issue.

FINDING MF-6 Site-wide Leadership

The Department of Energy Field Office, Idaho, has not provided sitewide leadership in the development of common sitewide practices (including the Argonne National Laboratory-West site) to ensure that roles, responsibilities, authorities, and important interfaces between contractors are clearly defined with respect to Environment, Safety, and Health.

Discussion

ID has a special role in directing the work of its contractors and in ensuring that resources are effectively used. From its unique position, ID should be aggressively seeking opportunities to find sitewide (including the ANL-W site) approaches to problems. This sitewide approach is especially important to ensuring common implementation practices regarding activities that employees may be engaged in at differing contractor sites (e.g., warning alarms, labels and signage, and lock and tag procedures). It is not sufficient to just issue ID supplementing orders in these areas since they have been implemented differently by the INEL contractors.

The diversity in function and geographic separation of facilities at the INEL and the number of separate corporate entities have resulted in a very complex system of interfaces. ID has been proactive in addressing some sitewide issues through the assignment of a "Landlord" role to EG&G. This has required a proliferation of interface agreements Memoranda of Understandings (MOUs) with many in draft stage. However, interfaces and functional relationships between EG&G and other operating contractors at INEL are not well defined, documented, or understood. (See Section 4.5.1.18, Concern MS.5-1.) Due to over commitments, and sometimes due to competing priorities, EG&G is not always able to provide needed goods and services to the other M&Os on a timely basis. (See Section 4.5.3.1, Concerns OA.1-5, and OA.1-7, and Section 4.5.3.16, Concern AS.1-2.)

The interfaces between organizations have not been well defined by ID and have led to the contractors initiating and developing, on their own volition,

formal MOUs between themselves in order to define limits of accountability for their functional responsibilities. A graphic example is the initiative taken by MK-FIC earlier this year to develop and put into place a series of MOUs for construction support activities. A single MOU has been developed, signed, and approved by ID between MK-FIC and Rockwell-INEL. However, MK-FIC proposed developing a series of eight MOUs with WINCO and nine MOUs with EG&G Idaho to cover the areas of:

- Facilities
- Health Physics
- Industrial Hygiene
- Fire Protection
- Environmental, NEPA etc.
- Medical
- ES&H
- Occurrence Reporting
- Well Drilling (EG&G Idaho only)

The number and arrangement of MOUs proposed by MK-FIC was attributed to the fact that there were too many groups in WINCO and EG&G to get agreement, indicating a lack of strong corporate leadership and personal identity on the part of these organizations, or a lack of management involvement.

EG&G Idaho established a multi-departmental Construction Safety/MK-FIC Interface Agreement Corrective Action Team to consolidate the interfaces of all construction-related areas into a single MOU. The initial draft was transmitted to MK-FIC on May 7, 1991. Joint MK-FIC/EG&G Management Review Teams created a final version of an umbrella agreement in early June that does not include interfaces in the areas of Facilities and Occurrence reporting, which are covered in separate MOUs. Details of the umbrella agreement in 10 topical functions are still being drafted. The complexity of this arrangement implies how strong these separate corporate functions have been in staking out boundaries rather than working toward broader and more integrated corporate goals. The net result is that corporate policy is being set from within the organization rather than from executive levels. None of these agreements are signed. The goal for final agreement on this system of treaties and arrangements had been early June. No new goals have been established.

This system unnecessarily complicates activities at the working levels of the organizations because it multiplies the numbers of details and administrative requirements associated with the roles, responsibilities, and authorities that must be followed. It represents a significant expenditure of resources not only to create, but also to ensure that personnel are trained to the multiplicity of requirements and are sufficiently monitored to ensure compliance.

Although ID has been active in the coordination of Emergency Planning activities, ID has not provided sufficient guidance to clarify who will assume command over an emergency situation during a contractor's facility emergency, to specify that EG&G Idaho will assume a supportive function and a protective action response for all other INEL contractors for non-EG&G Idaho emergencies, and to ensure that an integrated effort between INEL contractors can be achieved for support during emergency operations. There is much that still needs to be done in basic emergency activities such as standardization of alarms and warning signals across all INEL facilities, and the specification of capabilities of the Warning Communication Center. (See Section 4.5.2.7, Concerns EP.1-1 and EP.4-3).

The Health and Safety and Environmental Subteams identified several areas where additional sitewide activities should be instituted or were not being effectively implemented, in particular fire department activities (see Section 4.5.2.17, Concern FP.1-2), construction oversight, hoisting and rigging practices, lockout/tagout procedures (see Section 4.5.2.15, Concerns PP.2-1, PP.3-2; Section 4.5.2.3, Concern OP.4-1; Section 4.5.2.16, Concern WS.4-4), labels and signage (see Section 4.5.1.10, Concern CS.5-5; Section 4.5.1.14, Concern RP.3-2; Section 4.5.2.3, Concern OP.5-1; Section 4.5.2.14, Concern RP.3-2; Section 4.5.2.16, Concern WS.4-1), training (see Section 4.5.1.5, Concern TC.1-4), and permitting areas (Section 3.5.1, EA-Air and Section 3.5.2, EA-Surface Water).

Self-Assessment

Some of the EG&G issues were addressed in their self-assessment. The ID Self-Assessment did not identify this finding.

FINDING MF-7 Directive System

The Idaho National Engineering Laboratory directive systems are not being effectively used to ensure a common understanding of requirements, to convey site specific guidance, or to ensure that implementation methodologies meet legal requirements.

Discussion

The directive system (DOE Orders, Secretary of Energy Notices, Supplemental Directives, Program Guidance Letters) is the primary mechanism for communicating DOE requirements to the contractor, including those for ES&H. It provides the best opportunity for both parties to convey their respective expectations and ensure a common understanding.

Department of Energy Program Senior Officials

- The differing guidance and requirements imposed by the various PSOs regarding implementation of ES&H requirements are causing confusion, excessive efforts to coordinate, and general inconsistent approaches, which undermine an effective and efficient ES&H program (e.g., NEPA, Conduct of Operations, Self-Assessment).
- With regard to emergency planning activities, EH has recently issued DOE Order 5500.3A that has an undefined requirement that

during emergencies, facilities be capable of "process control." In the commercial nuclear industry, "process control" refers to the ability to control reactivity, heat sinks, and containment systems. This definition will have a major impact on all DOE Class A reactor facilities with the exception of Savannah River reactors. Further definition and guidance will be required to the field and contractors prior to the November 1991 compliance requirement date. (See Section 4.5.1.7, EP.5.)

- ES&H guidance provided by the various PSOs through the annual budget call, unlike programmatic guidance, is generic in nature (e.g., comply with all applicable ES&H requirements), and does not provide site-specific guidance or priorities.

Department of Energy Field Office, Idaho

The following deficiencies were found in the ID directive system:

- Directives are not sent by the ID Contracting Officer to the M&O Contracting Officer.
- The ID directive system does not capture and, therefore, does not transmit to the contractors secretarial-level letters or program guidance letters. Although the letters are in the ID Manager's correspondence control system, the system is not ID-wide, and has failed to provide timely advice in the past. For example Admiral Watkins' July 1990 self-assessment guidance was not distributed to most contractors by the ID line program organizations until March 1991.
- SENs are distributed to contractors through the same logistical system as Orders. However, SENs related to ES&H activities are not formally transmitted by ID with site-specific guidance to the contractors, and do not require a response or action plans.
- ID does not obtain information on the impacts of new or draft orders from its contractors through the established process of directive review. Resource and program impacts have been obtained by ID on an ad hoc basis on rare occasions.
- ID has not been timely in dispositioning contractor implementation plans in response to new directives after submission. A review of files indicates as long as 8 to 12 months between submission and notification to the contractor of rejection, during which time the contractor has been implementing their plan of action.
- ID's tracking of the directive process is done on the individual file folders assigned to each Order. This manual tracking process is ineffective and has resulted in tracking deficiencies such as delayed responses and contractors that have never responded to the Orders transmitted. As a

result, the M&O Oversight Branch is developing their own tracking system. It would appear more appropriate that this become a module of an ID-wide correspondence and commitment control system rather than another stand-alone tracking system.

- Although OESHO is responsible for developing ID ES&H policy through the directive system, it does not review the contractor implementation plans in response to these policies. Acceptance of the contractor implementation plans is performed by the line program offices with OESHO determining acceptability during the course of appraisals, which may be 5 years later.
- Neither the ID nor the CH/AAO directive systems are keeping each other informed of directives that may impact them as required by the CH/ID MOU.
- ID has established a Directives System Improvement Task Force to correct deficiencies found in the ID self-assessment to ensure a common understanding of requirements, to convey site-specific guidance, and to assure that implementation methodologies meet legal requirements.

Argonne Area Office-West

- AAO-W oversight of ANL-W is hampered by the lack of formally established processes that ensure AAO-W gets the information needed to carry out its assignment. Directives from CH, responses from ANL-W and ANL-E, and ID directives have not always been communicated to and between AAO-W and ID. (See Section 4.5.2.3 Concern OP.3-3 and Section 4.5.2.12, Concern EA.3-1.)

Westinghouse Idaho Nuclear Company, Inc., Protection Technology of Idaho, Inc., Morrison Knudsen-Ferguson, Rockwell-INEL

- With the exception of EG&G and ANL-W, all contractors indicate that there is little to no legal counsel involvement in the directive process. WINCO counsel indicated that WINCO play a passive role in the Order review and conversion to company policy, practice, and procedures process. WINCO counsel routinely receives this material, but is not required to respond, and only gets involved if interested or asked. Rockwell-INEL, MK-FIC, and PTI do not have any onsite counsel and involve counsel only on their initiative, which is infrequent.

Self-Assessment

None of the self-assessments identified the substance of this finding with the exception of the need for an ID Directive Tracking System.

FINDING MF-8**Management of National Environmental Policy Act at Idaho National Engineering Laboratory**

The Department of Energy Field Office, Idaho, has failed to follow the Council on Environmental Quality regulations, the DOE Order, and the Secretarial Notice for implementing the provisions of the National Environmental Policy Act.

Discussion

One of the keystone features of the CEQ regulations governing the National Environmental Policy Act (NEPA) is the requirement to involve the public and other agencies early in the decision-making process. SEN-15-90 states "compliance with NEPA should be entirely consistent with efficiency in achieving mission goals if NEPA requirements are considered early in the planning process."

If an Environmental Impact Statement (EIS) is to be prepared, a Notice of Intent (NOI) must be published in the Federal Register to inform the public and other agencies and to solicit input on the preparation of the EIS. In view of the foregoing, it is mandatory that the NOI be published as early as practicable after the decision to proceed with an EIS has been made.

In reviewing the NEPA activities at ID, it was learned that ID has not involved the public and other agencies early in the NEPA planning process as illustrated by the following:

- Agreement in principle on the current INEL NEPA strategy was reached with all cognizant DOE-HQ components in June 1990. It was reaffirmed at that time that the first EIS in the strategic plan would be for the Idaho Chemical Processing Plant (ICPP). Nevertheless, it took ID 6 months to get the review copy of the NOI sent to DOE-HQ. This is particularly unfortunate in view of the extremely long time it historically has taken to get DOE-HQ's approval to publish a NOI. As a consequence, it is likely the NOI will not be published until this fall at the earliest, 15 months since the ID reached a decision to prepare the ICPP EIS. This hardly qualifies as advising the public early in the decision-making process.
- During the 6 months from June to December 1990, ID worked closely with Naval Reactors (NR) to obtain their comments and concurrence on the ICPP NOI. One significant issue relating to the definition of the No Action Alternative required considerable effort and time to obtain concurrence from NR. It is likely that a conference with the Office of NEPA Oversight (EH-25) early in that debate would have resolved the problem rather quickly, speeding up the preparation of the draft NOI.
- Anticipating that the ICPP would be the first EIS in the INEL NEPA strategy, WINCO spent about 6 months in late 1989 through May 1990 developing a draft NOI for the ICPP EIS. The approach was based on supplementing the 1977 INEL waste management operations EIS (ERDA-1536). WINCO, on advice of counsel other than DOE counsel, decided such an approach was acceptable. However, ERDA-1536 is

clearly too old to be credible in today's NEPA/regulatory environment. Furthermore, it does not include such facilities as the Fluorinel Dissolution Process and Fuel Storage (FAST) and the Fuel Processing Restoration (FPR).

Although ID expressed concerns with such an approach as early as February 20, 1990, it wasn't until May 1990, 3 months later, that ID directed WINCO to abandon the supplement approach and to prepare a NOI for a new EIS. Also, consultation with EH-25 in late February 1990 probably would have convinced all affected INEL parties to abandon immediately the supplemental EIS approach. Having done so, 3 months of work would have been saved and could have been devoted to the preparation of a NOI that could be approved by DOE-HQ. An effective tracking system may have assisted ID in expediting the corrective action suggested; however, no such system was in place.

In SEN-15-90, Admiral Watkins said "mission goals are best served by early and adequate NEPA planning, which avoids the delays that often follow eleventh hour consideration of NEPA requirements, the resulting failure to comply fully with those requirements, and, ultimately, the necessity to cure NEPA-related deficiencies before an important project may proceed." To ensure that NEPA planning is early and adequate, it is necessary that key NEPA planning documents and guidance on NEPA procedures be distributed promptly to all affected parties. Such is not the case at INEL as illustrated by the following:

- ID failed to disseminate a key document relating, among other things, to NEPA planning activities at INEL. The MOU between ID and CH was not distributed to either the ID Assistant Managers or to CH or AAO-W. Consequently, the INEL Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)/NEPA Integration Plan was not distributed to DOE-Idaho Branch Office of the Naval Reactor Facility (IBO) and AAO-W until July 2, 1991, more than 4 months after it was distributed to EG&G and WINCO. The eventual distribution to IBO and AAO-W was a direct result of the Management Team's inquiries.
- It took 2-1/2 months for ID to respond to a request for guidance concerning a list of issues and recommendations raised at the EG&G INEL NEPA Conference held March 10, 1991, and transmitted to ID by EG&G on April 19, 1991. The objective of the conference was to establish consistency at INEL in approaches to NEPA and to discuss common problems. ID's response was prompted by the Tiger Team's inquiries.
- AAO-W has no NEPA specialist on its staff. As a consequence, AAO-W communications with ID and its contractors and with ANL-W regarding NEPA activities are inadequate.

DOE Order 5440.1D states that each field office will designate a NEPA Compliance Officer (NCO). The Order specifies that the NCO shall review NEPA documents for compliance with the CEQ regulations, the DOE NEPA Guidelines, SEN-15-90, and other DOE NEPA-related procedures and guidance.

The establishment of NCOs as part of the oversight function is based on one of the fundamental requirements of an effective ES&H/QA program; namely the objective review of documents by a competent, independent organization. To ensure that these reviews are objective, there must be no actual or potential conflict of interest on the part of the NCO.

However, in reviewing the activities of the ID NCO, it was learned that, in addition to her NCO responsibilities, she has been assigned project manager responsibilities for the INEL Environmental Restoration/Waste Management (ER/WM) EIS which presents a conflict of interest situation. As project manager, she will be responsible for ensuring that EIS is prepared on schedule and within budget and is a credible NEPA document. The rationale given by the Assistant Manager for Site Engineering and Support (AMSES) for this assignment is that facility-specific EISs are the responsibility of line management (e.g., the ICPP EIS is the responsibility of the Assistant Manager of the Nuclear Programs) whereas the ER/WM EIS is "sitewide" and therefore is the responsibility of the AMSES, in which the NCO currently resides.

However, such an assignment presents the potential for conflicts of interest between the expediencies of project management and those of providing objective and independent oversight of the adequacy of NEPA documents. To avoid such conflicts, it would be advisable not to assign project management responsibilities for a NEPA document to the NCO. To avoid any perceived association with the line organizations and to preserve true independence from them, it would also seem advisable to assign the NCO to the OESHO, rather than to a support organization such as Site Engineering Support. (See Finding MF-4). It is understood that prior to the last ID reorganization, such a possibility was discussed but not implemented.

The responsibilities of a project manager on a major EIS would very likely require full-time attention, which places in question the ID NCO's ability to discharge effectively and in a timely manner her already considerable responsibilities.

Self-Assessment

None of the above deficiencies in implementing the provisions of NEPA were noted in either the ID or AAO-W self-assessments.

FINDING MF-9 Environment, Safety, and Health Management Information System

The Idaho National Engineering Laboratory does not have an effective and integrated Environment, Safety, and Health management information system from which to determine the status of, and base decisions regarding, Environment, Safety, and Health, with the exception of Westinghouse Idaho Nuclear Company and EG&G Idaho, Inc. systems.

Discussion

An effective ES&H management information system includes the tracking, trending, root cause analysis, lessons learned, prioritization of corrective actions, and closure of ES&H matters.

That it is essential to have this system in place was stressed by Secretary Watkins in his letter of July 31, 1990, to the Managers of DOE Field Offices ("Guidance on Environment, Safety, and Health Self-Assessment"). In this letter, the Secretary reiterates the need for formal systems to track findings and take corrective actions; to perform root cause analyses; and to identify trends and mechanisms to communicate root causes, trends, and lessons learned throughout the organization and incorporate them into daily operations and planning. Effective systems to perform these actions are not in place at INEL with the exception of EG&G and WINCO organizations.

Department of Energy Field Office, Idaho

- Aside from standard DOE accident reporting indices and the recent development of a list of performance indicators based on the guidance in SEN-29-91, ID has not had an integrated set of performance indicators for the INEL site.
- Tracking systems should provide management with timely, accurate information to make sound decisions on ES&H issues. ID contractors have been supplying periodic status reports to ID (quarterly in the past, except for PTI, Rockwell-INEL, and MKF; and starting July, on a monthly basis) on their internal and externally generated audit findings. These contractor status reports are supplied to the ID line program organizations; however, there is no comprehensive and integrated ES&H tracking system or database at ID to receive these data (a Compliance Management System is under development). Currently, each line program organization has one or more tracking systems, but they do not convey a comprehensive picture of ID ES&H activities. In addition, summary status reports from the existing systems are not provided to senior management (Manager of ID or the Assistant Managers) for their review and/or action. Currently, OESHO has no tracking system.
- ID guidance provided to the contractors regarding the content of the periodic status report requires only the reporting of the status of internal and externally generated Category I and II findings. It also requires the reporting of any Category III issues that the Facility Representative specifies, usually a group of similar findings. It should be noted that the largest percentage of all findings are Category III and are, therefore, not reported to ID.
- ID rarely performs any trend analysis of findings, relying on the contractors' efforts to look at findings, particularly Category III findings, to determine trends that can be analyzed for root causes. The lack of trending and reporting to upper management (as discussed above) diminishes management's ability to determine if similar problems exist throughout ID and to implement more effective solutions to systemic problems.
- ID rarely performs root cause analysis of their findings, and no procedure for determining when and how ID and its contractors are to perform root cause analysis has been provided. Such analysis

is essential to determining the fundamental reason a deficiency exists.

- There is no "lessons learned" program to convey the results of ID experiences or related external experiences to the ID staff.
- ID guidance on prioritization of findings is based on the Tiger Team Prioritization Levels I-IV scheme. While this is a consistent prioritization process, it does not provide sufficient definition, when considering the large number of findings in the database and the availability of resources, to ensure that these scarce resources are directed, in appropriate sequence, to the most critical ES&H issues.
- Corrective Action Plans (CAPs) are prepared by the contractor for all external and internal CAT I and II findings and for trended CAT III findings. These CAPs are approved by the ID line program offices. Closure of these findings is validated and approved by these same line program offices, even for findings generated by OESHO. These independent ES&H oversight findings may be spot-checked by OESHO, but in general, they are reviewed for adequacy during the next audit activity, which could be as long as 5 years. This approach was a "conscious decision on the part of ID...in keeping with the policy that line management has full responsibility for ES&H and QA, it is ID management's considered policy that OESHO should remain strictly independent of concurrence/approval process." However, best management auditing practice indicates that it is desirable to have, whenever possible, the original auditor involved in the audit closure process and clearly not to permit an unacceptable corrective action to go unreviewed for as long as 5 years. In addition, closure of findings has not been effective. There are open audit findings dating back many years, and responses to findings do not always fully address the identified issues. In most cases, ID does not formally identify the acceptance of a closure determination to the operating contractors. The lack of summary reports to senior management regarding these deficiencies inhibits long-term corrective action.
- Findings resulting from the activities of the EH Site Safety Representative (SSR) are not being effectively communicated to the affected contractors, tracked, or resolved by ID. ID Order 5480.17 places responsibility on the line program managers to convey SSR findings to the appropriate contractors for action and to track and resolve the deficiencies cited. The ID EH SSR office has recently completed a special review of Issues Management at INEL and found substantial deficiencies in the ID program particularly with regard to the handling of SSR findings. It should be noted that SSRs are not responsible for tracking or closure of outstanding findings resulting from SSR activities. Tracking and closure are the responsibility of EH 362, which to date has been relatively inactive in this area. This reduces the perceived value and importance attached to SSR activities by all the audited parties. (See MF-16.)

Argonne Area Office-West

- AAO-W has developed an ES&H management information system commensurate with the small staff size of the AAO-W (five full-time employees). The primary component of this system is the Open Items Tracking system, which is used to follow-up on and validate closure of Surveillance and audit findings. AAO-W, however, is not performing trending or root cause analysis of these findings. The only prioritization of issues is the periodicity (weekly, monthly, or undefined) with which an open item will be reviewed at the regular AAO-W/ANL-W weekly management meeting. This management information system would be acceptable, considering the size of the AAO-W staff, if rigorously followed. However, AAO-W's informality and less than vigorous follow-up have adversely affected ANL-W's performance in closure of findings, trending, and root cause analysis. (See Section 4.5.2.4, Concern MA.7-1; Section 4.5.2.8, Concern TS.4-1; Section 4.5.2.13, Concern FR.6-1; and Section 4.5.2.14, Concern RP.10-2.)

Argonne National Laboratory-West

ANL-W has done some ES&H trending, but this has not been an important tool used by management in decision making. ANL-W has done no root cause analysis, and has not implemented a lessons learned program. Procedures for these have not been developed. Also, ANL-W does not have an ES&H tracking system, but relies on the AAO-W to track the DOE surveillance findings and ANL to track ANL and DOE appraisals.

Morrison Knudsen-Ferguson of Idaho Company

MK-FIC has recently developed a tracking system to track ES&H appraisal and surveillance findings. However, MK-FIC is doing no ES&H trending, root cause analysis, or lessons learned evaluation. The Company has recently hired and trained a person to be responsible for these activities. Procedures, however, need to be developed. MK-FIC is lacking information on the status of environmental compliance for all of its INEL operations.

Protection Technology of Idaho, Inc.

PTI has an ES&H tracking system, and has done some ES&H trending and root cause analyses. However, formal guidance and procedures need to be developed and followed if trending is to become an affective management tool. Also, PTI has no lessons learned system to evaluate problems identified by incidents and internal and external audits.

Rockwell-INEL

Rockwell-INEL implemented a computer tracking system about one year ago. All ES&H action items are listed, including findings from walkdowns, assessments, and surveillances that have not been closed within 3 weeks. Rockwell-INEL started in January 1991 to do root cause analysis. Procedures have been developed, and managers are being trained. Rockwell-INEL, however, is not doing ES&H trending or implementing a lessons learned program. This contractor is presently in the process of developing trending procedures;

however, the omission of findings closed within the 3-week period will weaken the trend analysis.

Self-Assessment

The ID self-assessment identified the need for all the systems contained in this finding, but it is not clear that the corrective actions will fully remedy the deficiencies. None of the other self-assessments identified these findings with the exception of MK-FIC identification of the lack of root cause analysis.

FINDING MF-10 Cost Plus Award Fee

The Cost Plus Award Fee process, as implemented at Idaho National Engineering Laboratory by the Department of Energy Field Office, Idaho, has not produced comprehensive and realistic evaluations of the contractors' Environment, Safety, and Health performance and therefore has not reached effectiveness in providing appropriate incentives for Environment, Safety, and Health performance.

Discussion

ID holds seven prime contracts that provide for cost plus award fees (CPAFs). Two of the contracts are not within the scope of this Assessment. The others are with EG&G, MK-FIC, PTI, Rockwell, and WINCO. As stated in the Award Fee Determination Plans typically used at INEL, the objective of the CPAF process is to afford the contractor "an opportunity to earn increased fee commensurate with the achievement of optimum contract performance." Accordingly, the process is effective when it motivates a contractor to strive for improved performance in areas identified, and when it effects changes in undesired performance. However, a number of deficiencies in the manner in which ID has been conducting the CPAF process suggest that the process has not been materially contributing to contractor improvements in ES&H performance.

The essential elements of the CPAF process at INEL are generally in accord with current DOE policy and practice; for example:

- The ES&H performance emphasis has steadily increased over recent years from where it was relatively insignificant to where it approximates more than 50% of the weighted performance points.
- Award Fee Determination Plans are provided in a timely fashion and these plans include performance areas, objectives, and criteria. Performance monitors evaluate contractor performance throughout the pertinent periods. DOE-HQ is intermittently involved in various stages of the process
- An Award Fee Board submits to the Fee Determination Official (FDO) a report that includes a recommended award fee, and the FDO, after DOE-HQ concurrence, makes an award fee to the contractor.

Although the machinery of the process is in place, the implementation by ID has been deficient in a number of respects.

There is little doubt that the CPAF process is inherently laden with the subjective elements of opinion, impression, and judgement; many performance situations are simply not amenable to physical or mathematical objective measurement or evaluation. However, current policy requires an effort to maximize objectivity wherever possible. Indeed, the very exercise of establishing specific and objective performance elements compels the evaluators to achieve a greater understanding of precisely what constitutes desired performance. In practice, therefore, an effective CPAF process includes a proper balance of subjective, or general, and objective, or specific, performance elements. This balance has not been the case at INEL. Rather, the practice has been to state ES&H performance criteria in such general terms that they defy objective measurement or evaluation; For example,

- "adequacy of health and safety program"
- "compliance with DOE and ID requirements and other applicable laws and requirements"
- "adequate and properly implemented policies, procedures"
- "adequacy of organization and staffing"
- "adherence to safety requirements"
- "effectiveness in maintaining standards of excellence"
- "Specific Priority: effective implementation of assigned actions."

There has been an attempt to make the criteria more specific in the Award Fee Determination Plans established for the current period, April 1, 1991, through September 30, 1991. As a result, these plans are generally an improvement over their predecessors. Furthermore, for the first time, performance objectives are weighted in addition to performance areas, and ES&H performance is identified as a subweight for each area and objective. Additionally, greater importance is given to the contractor self-assessment program as a performance element. However, performance objectives are not stated as objectives but as headings or titles, and one must look to the criteria to understand their purpose. In most instances, there are too many criteria associated with a performance objective. Some of the criteria appear to relate to on-going, generalized performance expectations (e.g., "implement ES&H support," "meet or exceed DOE and other applicable ES&H requirements," "responsiveness to DOE communications with all participants"). Other criteria are specific enough to require completion or improvement during the rating period. No indication is provided as to the relative importance of each category. Many of the generalized performance expectations are susceptible of roll-up into more meaningful performance elements.

There is no integrated sitewide baselining of ES&H activities among the INEL M&O contractors. This is due, in large part, to the fact that each of the PSOs approaches ES&H baselining differently. As a result, there has been little attempt by ID to baseline the ES&H performance in the CPAF process. In the absence of such baselining, it is difficult for the contractor to understand with any precision what discrete portions of long-term ES&H activities it is expected to accomplish during the pertinent CPAF period.

Award Fee Determination Plans require the contractor to provide a written self-assessment of its performance during the rating period. Contractors were given little guidance by ID on what these self-assessments should look like. For the most part, they have resembled status of activities reports rather than realistic, balanced, self-assessments, and therefore have not played an important part in the evaluation process. Since December 1990, ID has on several occasions provided written guidance to the contractors for their use in preparation of the CPAF self-assessments. The guidance addressed format, content, focus, level of detail, need for corrective action plans, and administrative concerns.

The CPAF process culminates in the FDO's letter advising the contractor of the award fee for the rating period. This eagerly awaited letter is a quintessential attention-getter. From this lofty platform, the FDO can express to a raptly attentive audience his personal pleasure in performance that caused the award fee to increase; he can deliver a stern reprimand for performance that caused the award fee to decrease; and he can declare his agenda for the contractor's performance in the succeeding rating period, placing emphasis where he chooses.

Instead, the FDO letters issued to the contractors by the ID Managers have followed a simple format: repetition and adoption of the Award Fee Board's adjectival rating, statement of the award fee amount, and little else that can be viewed as guidance or philosophy. For example,

- "Performance rating for this period reflected an improvement over the prior period's performance."
- "Although there was a reduction in your overall performance...there were numerous activities...wherein both management and staff demonstrated a timely and thorough response. You and your staff are encouraged to keep up the good work." (emphasis added)
- In a recent letter which gave an overall "Satisfactory" rating, the only observations were: "This performance rating reflects an improvement in the areas of [ERWM and ES&HQA]. Performance in the Nuclear Programs Area and Management experienced a downward trend." (emphasis added) However, it is noted that the ES&H "improvement" occurred in a period in which there was a coal dust explosion; total injury and illness incidence rates were over twice the DOE and ID averages; fire loss rates were seven times the DOE average; property loss rates were higher than the DOE average; and motor vehicle loss rates exceeded the national safety council averages by more than a factor of four.

Based on the findings and concerns identified in this Tiger Team Assessment, the frequent high marks that contractors have received in recent years for their ES&H performance (e.g., MK-FIC received an "Excellent" in almost every rating period since April 1988) did not realistically portray the actual condition of such performance.

In a December 1990 letter to the President of the United States, the Secretary of Energy stated that actions are required

to ensure that Contractor compensation rewards excellence and penalizes unsatisfactory performance....[P]erformance expectations, and performance criteria must be better defined....

A well-formulated and properly implemented CPAF process can achieve the Secretary's goal and will result in contractors who are more responsive to identified DOE ES&H requirements. The key elements of the process are being re-examined by ID under the direction of the Assistant Manager, Administration. While this is an on-going activity, a draft handbook covering the ID CPAF process has been produced. In many respects, the handbook is a restatement of the current version of Part I of the Performance Evaluation Plan currently in use in the INEL M&O contracts, with better organization and phraseology. Some of the material is new, however, and represents substantive improvements in the CPAF process. For example,

- The Award Fee Board will include the Director of OES&HO as a member and a representative of the Contracts Management Division as an advisor, and the activities of the Board have been broadened.
- The FDO's letter to the contractor that determines the award fee will include a "statement of the Contractor's performance and significant achievements and/or deficiencies" (the words "generally" and "brief" should be removed from that section).
- The role of the Performance Monitors has been increased.
- Objectivity of the evaluation criteria is to be maximized.
- Increased interaction with the contractor at various stages is required, thereby enhancing the likelihood of contractor trust in the process and consequent motivation. For example,
 - the Performance Evaluation Committee members are encouraged to formally obtain input from the contractor in the establishment of the Performance Evaluation Plan, and the Committee must meet with the contractor formally three times during the rating period.
 - Provision is made for the FDO to hold discussions with the contractor after he has issued his letter.
- Some recognition is made of the need to baseline contractor performance.
- CPAF self-assessments will include corrective action plans for self-identified deficiencies.

A training program has been developed for all ID personnel involved in the CPAF process.

It remains to be seen whether this new initiative will capture, in its implementation, the salient points identified herein.

Self-Assessment

The ID self-assessment recognized that the CPAF process is not sufficiently defined and documented to ensure consistent accurate evaluations, that Branch CPAF evaluations are late and inadequate, that criteria development and priorities are confused, and that persons conducting the CPAF process are not sufficiently trained. It did not identify the other issues raised in this finding.

The WINCO self-assessment addressed the issue related to the specificity and measurability of evaluation criteria, but it did not identify the other issues in this finding.

FINDING MF-11 Stop Work and Restart Authority

Idaho National Engineering Laboratory stop work authority, with the exception of Protection Technology of Idaho, Inc., is not clearly defined or uniformly understood nor is there a defined restart process when this authority is used.

Discussion

It is important for all employees to unequivocally know the degree of authority they have, the authority others possess, and the applicable procedures to stop work they observe, or are personally involved in, that they believe to be unsafe or may involve imminent danger to persons, property, or the environment. While all organizations, except for MK-FIC and Rockwell-INEL, have developed policies and procedures dealing with stop work authority, these policies and procedures are neither clearly defined or commonly understood.

Department of Energy Field Office, Idaho

- The ID Policy Manual Section 1.3.4 regarding stop work authority is ambiguous and inconsistent and may be interpreted as conditional. While granting all employees stop work authority, the next sentence in the policy implies conditions, and the section on Implementation reinforces this possible interpretation of conditioned authority.
- The ID restart procedure is written to cover the shutdown situation along the lines of SEN-16A-90 that is not applicable to the imminent danger situation covered by stop work authority. As a result of the M&O Subteams inquires in this area, the Manager of ID on July 1, 1991, supplemented Policy Manual Section 1.3.4. The memo authorized the responsible Program Assistant Managers to approve restart of activities suspended by ID employees and to develop procedures to implement this policy, which when carried out should correct this aspect of the finding. Some ID organizations have already implemented this procedure, such as the Assistant Manager for Environmental Restoration and Waste Management.
- Interviews with ID personnel indicated understanding of their stop work authority with the exception of Fire Department personnel. Fire Department personnel are ID employees and are covered by the authority granted in Policy Manual Section 1.3.4; however, they

are unaware of this policy and believe they do not have stop work authority.

Argonne Area Office-West

- AAO-SOP-16 dated May 1991 defines restart authority along the lines of SEN-16-90 that is not applicable to the imminent danger situation of stop work authority.
- AAO-SOP-16 addresses shutdown for safety reasons without mention of possible environmental conditions that would warrant exercise of the authority.

Argonne National Laboratory-West

- Based on interviews, ANL-W employees neither have a clear understanding of their stop work authority nor a procedure for restart. (See Section 4.5.2.1, Concern OA.1-1.)

EG&G Idaho, Inc.

- The stop work authority contained in the EG&G Resource Manual page 5-21 does not provide the workers the right to stop work they are directly involved with if they believe it is unsafe. Stop work authority is vested only in line managers, safety representatives, and the Performance Oversight and Assessment Group.
- The stop work authority identifies safety and health but not environment as reasons to stop work.

EH Site Safety Representatives

- The EH SSRs do not have stop work authority. Their functions, as described in DOE Order 5480.17, Attachment 1 Section 6, require them to work through the DOE contracting officer. Review of the ID EH SSRs reports indicate that there were a number of observations of life-threatening construction deficiencies that normally would have resulted in the use of stop work authority. These matters were reported to ID but without the immediate cessation of the work, thus submitting workers to a potential life-threatening situation during the resolution period.

Morrison Knudsen-Ferguson of Idaho Company

- MK-FIC has no formalized policy for stop work authority or for restart procedures.

Rockwell-INEL

- Rockwell-INEL has no formalized policy for stop work authority or for restart procedures.

Westinghouse Idaho Nuclear Company, Inc.

- The WINCO Policy Directive WPD 6-01, Environmental, Safety, and Health Protection, defines both stop work and shutdown authority but provides no reference for conditions necessary for restart.
- The policy stated in WPD 6-01 addresses employee "actions to prevent or to correct conditions that threaten personnel safety, product quality, or equipment integrity" without mentioning environmental insults.

Self-Assessment

None of the self-assessments identified these specific findings.

FINDING MF-12 Contractual Matters

The prime contracts between the DOE Field Office, Idaho, and the Idaho National Engineering Laboratory Management and Organization contractors do not consistently embody terms and conditions that reflect DOE priorities for Environment, Safety, and Health performance and for implementation of the Department of Energy's Environment, Safety, and Health initiatives.

Discussion

The prime contracts between DOE and the M&O contractors provide the legal bases for ensuring that the contractors will meet all of their ES&H obligations, and for codifying their commitments to full implementation of those obligations.

Although the prime contracts between DOE and EG&G, MK-FIC, PTI, Rockwell, and WINCO, respectively, are 3-5 years old, they have been modified periodically to include a number of new or revised ES&H-related provisions such as the Federal Acquisition Regulations Drug-Free Workplace and the Department of Energy Acquisition Regulations Award Fee clauses. A number of ES&H "boilerplate" clauses relating to health and safety, clean air and water, and nuclear reactor safety have been in the contracts since their inception. However, no attempt has been made to modify the contracts to reflect DOE's ES&H priorities. In every instance, the Statement of Work clauses, and the contracts taken in their entirety, continue to read as if programmatic matters are, if not the exclusive mission, certainly the primary one.

The recent draft 3-year renewal of the EG&G contract presented an opportunity to ID to alter this posture. However, with respect to ES&H, that document does not differ materially from the current contract. The Statement of Work clause continues to be virtually silent on ES&H concerns.

Similarly, the recompetition of an M&O contract is an event that presents an optimal opportunity to break new ground, to revise or restate priorities, and to demand commitment to those priorities as a condition of award. Following the notification by Rockwell that it did not wish to continue its contract beyond 1991, ID issued a Request for Proposals (RFP) in March 1991 for the management and operation of the Specific Manufacturing Capability (SMC) facility. An examination of the RFP discloses little evidence of the advancement of the Secretary's ES&H initiatives. There are a number of references to ES&H in the RFP's proposed contractual language, but most of these are restatements of the current SMC contract with Rockwell. Indeed,

there is little to distinguish the proposed contractual language of the RFP from that of the current contract, and little to distinguish the RFP contents from standard ID format.

While there is an evaluation subcriterion for award covering experience and competence "in providing and maintaining an effective" ES&H program, that subcriterion is weighted at less than 15% of the total weight of evaluation criteria.

It is understood that an ES&H representative served on the Source Evaluation Board for this RFP. However, there are no formal requirements at ID for such representation on Source Evaluation Boards and Panels and no formal guidance on the role of ES&H in the solicitation process.

Self-Assessment

The ID self-assessment did not address these issues.

FINDING MF-13 Lack of Construction Environment, Safety, and Health Oversight

The Department of Energy Field Office, Idaho, and the Idaho National Engineering Laboratory contractors are seriously deficient in construction Environment, Safety, and Health oversight.

Discussion

Construction activities typically have higher hazard levels for the individual than the usual engineering design, operational, or maintenance activities at the INEL. The possibility of accidents, long-term health degradation, and environmental damage is also increased through the use of many subcontractor organizations providing staff who have very limited training in proper ES&H techniques. The control of ES&H requirements during construction has several components including defining ES&H specifications in contract requirements that are established before work starts, ensuring the proper knowledge levels in staff provided through verification of ES&H credentials and skills and training in deficiencies as appropriate, and ensuring and verifying that activities at construction sites are being conducted to the established ES&H standards of performance. If any of these components are deficient, then ES&H activities at the construction site will be limited, and the hazard levels will increase.

Review of construction activities at the INEL found that all site organizations were deficient in controlling ES&H activities at all types of construction including modifications and major capital project work.

Department of Energy Field Office, Idaho

The most poignant example of the priority and attention given to construction ES&H oversight is the fact that only one professional is assigned to the activity. While other ID staff such as the project engineers may perform inspection, the primary focus of the efforts are to verify technical parameters, not to ensure ES&H compliance. Furthermore, all ID personnel in

this functional area were difficult to contact, leaving the question of prompt response capability to urgent issues a moot point.

EG&G Idaho, Inc.

As the landlord for the INEL, EG&G has a major role in construction activities, including both modifications and capital projects. Extensive use is made of small businesses for much of this work. At present, the terms and conditions imposed on subcontractors require compliance with all Federal, State, and local health and safety laws. However, ES&H standards are not specifically defined or identified in currently written subcontracts. Some subcontract activities are inspected by EG&G Idaho safety personnel, but others cannot be inspected because of contract differences.

There is no uniformly applied program to ensure that contractors are capable of meeting specialty requirements for some projects such as industrial hygiene, radiation, or hazardous materials programs. For projects under the control of EG&G Idaho, when the contractor does not have sufficient expertise to develop special programs, personnel are provided by EG&G. For construction programs under the control of MK-FIC, when special requirements are needed and MK-FIC does not have the unique expertise in house, they are to request development of the program from the facility manager such as EG&G Idaho. EG&G personnel involved in developing such programs for MK-FIC have never been requested to verify implementation or compliance with these specialized and often very important programs, thus providing no assurance that personnel are properly protected during construction activities.

There is a difference between site construction activities and in-town construction activities. In the Idaho Falls area, Procurement Files of construction contracts for projects are not documented to reflect that the work was inspected for other compliance requirements, but documentation does exist within EG&G to substantiate inspections conducted. In both geographic areas, EG&G requires safety plans before subcontract construction work begins. However, such plans do not include environmental and health concerns.

Recent indications of the ineffectiveness of the construction safety oversight program are contained in a letter from ID to the Waste Management Department, EG&G Idaho dated 24 May 1991. This letter referred to construction activities at the Waste Experimental Reduction Facility, results of which provided a highly critical assessment of ES&H activities typified by the following quote: "It was observed that the job site ... was a mess."

Other details contained in this letter led ID to advise EG&G Idaho to investigate its policy and procedures in interfacing with MK-FIC subcontractors.

Morrison Knudsen-Ferguson of Idaho Company

On the site, MK-FIC has primary responsibility for construction program ES&H matters; however, MK-FIC does not have an adequate program in place; does not have an adequate staff of inspectors; and does not have permanent staff in industrial hygiene, health physics, fire protection, and environmental engineering. There are only two construction safety inspectors for all MK-FIC activities on the INEL.

For limited effort construction projects where small, independent contractors are used, MK-FIC policy is to request specialty support from EG&G and other facility owners when it is not available from within the MK-FIC organization. No planned surveillances of these MK-FIC subcontractors from an ES&H perspective have been performed by the EG&G facilities compliance inspectors, although some random surveillances have been performed on an ad hoc basis.

On the large capital projects, responsibility for ES&H activities has been extended through the subcontract to the major constructor, such as is the case with Ebasco Constructors Inc. (ECI) for the Fuel Processing Restoration (FPR) Project. In this case, MK-FIC has not acted effectively in gaining control of, and/or ensuring compliance with, contract safety, health, and environmental requirements, (e.g., OSHA, Safety Plan/Program, etc.) even when its own quality assurance program had provided significant evidence of non-compliance. A letter, MK-90-FPR-2B-P-0879 / D-L No. 1-89, dated 5 February 1991, from MK-FIC to ECI provided suitably substantiated concerns. It was answered by letter, EB-MK-02B-2373, 11 February 1991, from ECI to MF-FIC with actions to be taken to remedy the situation. It was obvious from the OSHA non-compliances found by the Tiger Team Staff that neither the fixes to the previously identified problems by ECI nor the oversight by MK-FIC were effective in resolving construction-related safety issues.

Rockwell-INEL

Rockwell-INEL has a signed single Memorandum of Understanding as identified by MF-7 with MK-FIC that defines specific ES&H activities/responsibilities for both MK-FIC and Rockwell-INEL. Rockwell-INEL fulfills these responsibilities with respect to construction oversight at SMC facilities. RRD-91-016, Project Management Plan, approved by the ID Program Office provides the methodology for communicating construction requirements including ES&H requirements. (See also Section 4.5.1.15, Concern PP.1-1, and Section 4.5.1.1, Concern OA.1-3.)

Self-Assessment

This finding was partially addressed in all the self-assessments of the affected contractors.

FINDING MF-14 Conduct of Operations

Department of Energy requirements and guidelines for the conduct of operations at Idaho National Engineering Laboratory facilities have not been adequately implemented as required by DOE Order 5480.19, Conduct of Operations Requirements for DOE Facilities.

Discussion

In November 1989 a memorandum from the Undersecretary of Energy delineated requirements for DOE contractors to conduct operations in accordance with the Institute of Nuclear Power Operations guidelines and required the preparation of procedures to implement these guidelines, along with plans and schedules for implementation, by January 8, 1990. On July 9, 1990, DOE Order 5480.19, Conduct of Operations Requirements for DOE Facilities, was issued providing 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.

It is obvious that a great deal of assessment and corrective action has taken place at INEL with regard to the requirements of DOE Order 5480.19. However, significant weaknesses exist in implementation. These weaknesses are apparent in untimely, inadequate, or missing analysis of contractor and facility compliance with the Order guidelines. More importantly, the weaknesses were apparent in the observations of inadequate performance made by the Tiger Team in various INEL facilities. As would be expected, INEL reactor programs are much further along in compliance with the DOE Order than non-reactor facilities.

The INEL contractors responses to the Order and the guidance and direction provided by ID offices varied significantly between contractors and facilities. Many of the responses did not adequately address the requirements of the Order, especially with regard to the adequacy of implementation (deviations and exceptions). The required documentation of compliance has still not been formally submitted to DOE by several contractors. In many cases, the ID Program Office staff provided little direction or guidance to the contractors, at least in any documented manner.

In many areas related to conduct of operations, the Tiger Team identified that policies, procedures, and the expressed expectations of management were not being followed at the working level. Lack of attention to detail, failure to follow procedures, and inadequate quality documentation were identified for activities at many facilities. In some cases at non-reactor facilities these discrepancies were pervasive.

Contractor managers and staff did not always demonstrate an appropriate understanding of what was intended or required by the Order or the level of discipline and formality needed to achieve compliance. In several cases, staff, management, and DOE representatives have demonstrated a tolerance for noncomplying conditions, deficient performance, and unnecessarily slow implementation of conduct of operations criteria. WINCO and DOE management reactions and direction to correct continuing, significant programmatic and performance deficiencies at the Idaho Chemical Processing Plant have not been consistently forceful, clearly communicated, timely, or effective.

The following are specific observations of the implementation of DOE Order 5480.19 by INEL contractors and ID. Because of manpower and time limitations, the Management Subteam assessment of the conduct of operations varied in both depth and breadth between the various contractors, contractor facilities, and ID Offices. The objective of the assessment was to determine the overall level of implementation at various INEL facilities and the adequacy of the management of the implementation. In arriving at this finding, the Management Subteam considered and referenced pertinent findings and concerns identified by the Safety and Health and Environmental Subteams.

Individual facilities for which the Management Subteam performed any direct reviews are shown in parentheses.

Department of Energy Field Office, Idaho

The timeliness and thoroughness of the ID direction to contractors on DOE Order 5480.19 and the review and response to the contractor's responses to the Order have been variable. The transmittal of the Order to contractors by the ID Administration office (August 1990) and contractor responses (eight of nine by October 11, 1990) were basically timely. However, the Administration Office did not formally request Program Office reviews of the responses until May 10, 1991. ID line offices have generally not taken formal action to request overdue responses or to respond to contractor submittals. For example, DOE did not respond to the unsatisfactory Mountain States Energy, Inc. submittal until July 19, 1991, and ID accepted responses from United Nuclear Corporation and EOC, Inc. that did not include the compliance breakdown required by the Order. In contrast, the Environmental Restoration Division of the Environmental Restoration and Waste Management (ER&WM) Office directed contractors working on its projects to respond to the Order and promptly acknowledged contractor submittals, requiring amplification and correction where appropriate.

The documented ID direction for SMC is minimal. DOE has not responded to the Rockwell-INEL matrix submittal of July 31, 1990. Neither SMC nor ID have formally developed comprehensive action plans, priorities, and schedules for achieving compliance. ID line surveillances of SMC are informal and undocumented, and primarily address housekeeping and maintenance issues instead of performance and operations.

Although ID now has full-time site representatives at the Idaho Chemical Processing Plant who are doing in depth assessments and identifying issues similar to those noted by the Tiger Team, prior oversight activities and previous actions to correct the identified deficiencies have not been timely or effective in bringing WINCO to an acceptable level of performance. (See Finding MF-16, "Corrective Action.")

Self-Assessment

The ID self-assessment did identify this finding.

Radiological and Environmental Sciences Laboratory

DOE Order 5480.19, Conduct of Operations, has not been implemented at Radiological and Environmental Sciences Laboratory (RESL). Only the Radiological Sciences Branch had prepared the implementation matrix, required by the order, and its content was minimal in scope and content. A matrix comparing requirements with current practices and procedures was prepared for the Radiation Calibration Lab but not for other RESL operations.

New implementing procedures are mostly in draft form. New implementing procedures have been issued in the Radiological Sciences Branch for log keeping and lock and tag, but log format, procedure adherence, and internal reviews of the logs are inconsistent and inadequate. Examples of deficiencies noted by the Management Subteam include:

- In the Radiation Calibration Lab (Bldg. 638), deficiencies in the implementation of tagging were noted; the tag-out log was not complete; tag No. 105 (open per the log) was not installed on the designated equipment; it was apparently cleared, but not logged at the time. Two tags issued in Building CFA-638 could not be located on the equipment. Access logs were not completely filled in, did not have all required maintenance inspections logged, and were reviewed and stamped by a supervisor although required information was missing. The monthly log and tag audit did not reflect what was audited, the status, or the acceptability of the results. Yellow "Caution" tags were being used instead of Red "Danger" tags because the lab did not have an adequate supply of "Danger" tags.
- Access log entries were missing for the Calibration Lab at RESL. The danger tag log was not centrally controlled.
- A listing of hot gas calibration correction factors in Building CFA-638 had numerous handwritten, unsigned changes, which constitutes an uncontrolled operator aid. DOE Order 5480.19 requires operator aids to be formally controlled.
- There is no document or procedure change control system in place. Many procedures are very old (i.e., dating from 1964) and should be reviewed for adequacy since equipment has been updated and analytical processes may no longer be appropriate, leading to the potential for error in analyses. Discussion of procedure adequacy with the Branch Chief of the Analytical Chemistry indicated that in his opinion the procedures, though aged, were basic analytical procedures and were considered adequate.
- RESL has not prioritized its open action items, does not have an effective items tracking program, and does not have any laboratory-wide action plan to bring the laboratory into compliance with the DOE Orders. There was no indication of prioritization in planning and budgeting particularly regarding ES&H items.
- The RESL staff experience relative to conduct of operation is extremely limited, and there is no evidence of guidance from the director or from ID resources with the needed expertise.

The Safety and Health Subteam identified concerns with general conduct of operations, see Section 4.5.3.3, Concern OP.2-10; procedures, Section 4.5.3.3, Concern OP.3-1 and Section 4.5.3.1, Concern OA.7-4; and caution tags, Section 4.5.3.3, Concern OP.4-2. See Environmental Subteam Findings related to a lack of or inadequate procedures, Section 3.5.7, Finding RAD/CF-3 and Section 3.5.5, Finding TCM/CF-2; and improper handling of hazardous wastes, Section 3.5.4, Finding WM/CF-1.

Self-Assessment

The RESL self-assessment did not identify the above concerns.

Argonne National Laboratory-West

ANL-W made submittals to DOE in response to the 1989 Undersecretary's memorandum in November 1989 and to the Order in November 1990. However, the matrix submitted in 1990 only provided a determination of applicability of the 18 criteria to ANL-W facilities. It did not address the specific guidelines, define the exceptions, or adequately discuss the level of conformance for the various facilities. DOE has not responded to this submittal.

There are no comprehensive formalized action plans, goals, or schedules at the site, Division, or Branch levels to clearly delineate the actions required to correct known deficiencies and achieve compliance with the Order.

Contributing to this deficiency is that the ANL-W central tracking system for commitments and open action items has only been in place since May 1991 and at present only includes self-assessment and Tiger Team findings. The fragmented systems used by the various ANL Divisions and Branches are not proceduralized, do not contain all important issues, are not distributed to management or other ANL groups, and are not used for trending.

No pervasive or significant conduct of operations issues were identified for the ANL-W reactor programs. Although a major effort is currently underway to achieve compliance in the non-reactors Divisions at ANL-W, the Fuels & Processes Branches are significantly behind in taking the corrective actions necessary to achieve compliance with the Order, and a number of operations-related deficiencies were identified at the Hot Fuel Examination Facility (HFEF).

Procedure adequacy, procedure adherence, document control, and logkeeping deficiencies were identified in HFEF and the Analytical Laboratory:

- Work control logs in HFEF had numerous discrepancies including the failure of Plant Services personnel to sign out after completion of maintenance activities, failure of HFEF supervision to sign off after completion of maintenance, and failure to specify any post maintenance testing or operability checks by HFEF.
- In the Analytical Laboratory, work was performed beyond the expiration date of a Safe Work Permit, using a procedure that had not been included in the ANL-W document control system, and with an uncontrolled and incorrectly approved Procedure Change Notice. These actions were performed with the knowledge of supervisory and management personnel. The Safe Work Permit that had originally been prepared for this work was not controlled and processed as required by procedures. Anomalies were also noted in the entries and dates recorded on laboratory operator logs related to this activity.
- HFEF procedure P.W.S. 2-2633, "Examination of S/A X461," step 1.1 requires the operator to mark the orientation of the fuel subassembly in relation to the shipping cask by noting the direction of a notch on the subassembly (e.g., east, north, etc.). The procedure is unclear as to how this direction indication relates to the position of the operator. The operator performing this particular evolution had recorded an orientation of "0." Facility management was unable to explain the recorded

information. A sketch later provided by management showed this orientation to be somewhere between West and East. Step 2 of the procedure provided a sketch showing the configuration for pinning the element to the shroud from a top view of the assembly.

However, a post-it sketch attached to the procedure in use showed the configuration from a bottom view. This indicates a possible unclear procedure step if an operator needed to draw another sketch to aid in visualizing or performing the step.

- In HFEF, Bearing Data Logsheet, Form 2133, Table IV, did not contain any tolerances or acceptance levels for the readings.
- Improper contamination control practices were exhibited by ANL-W personnel during a tour of the ZPPR work areas. One individual wore gloves to handle potentially contaminated items removed from contaminated work stations, but did not remove or change gloves when moving to other areas in the facility. The individual touched numerous "clean" surfaces in the area including tables, door handles, and airlock control devices. The individual also placed his gloved hands inside the pockets of his reusable, "clean" labcoat after handling the potentially contaminated items. Another individual used an ungloved hand to push down used booties that were overflowing the contaminated waste canister at the exit point.

ANL-W does not have procedures that effectively ensure that QA is given adequate consideration in the procurement of goods and services. DOE Order 5700.6B invokes ASME-NQA-1 as the preferred standard for NE programs. ASME-NQA-1 requires a procurement process that provides for evaluation of supplier capability to provide the items or services. There is no sitewide quality classification system based on at least a three-tiered quality system tied to the program requirements for nuclear facilities, as set forth in ASME-NQA-1. The quality plan and the procurement procedures for the Fuels and Process Division require that the requisitioner determine the quality level (level I, II, or III) of each item or service to be purchased, whereas the Fuel Cycle Division requires that items be classified as either vital or non-vital, major or non-major. Because of these disparate classification systems, items that should have been purchased from vendors with approved QA systems received no quality rating. They also were not identified as items that must be purchased from approved vendors. (See Section 4.5.2.2, QV.1, Quality Programs, and QV.2, Procurement and Supplies.)

ANL's Listing of Vendors with approved QA systems is not properly maintained and regularly updated. Argonne National Laboratory-East (ANL-E) maintains the laboratory-wide list, but during the last 3 years has issued only occasional updates, with the most recent in July 1990. During the past year, ANL-W has requested that a number of firms be added to the list, but nothing has been done. Prior to 3 years ago, the listing was updated quarterly. The current listing does not provide an adequate amount of approved sources. In what appears to be an attempt to fill the void, ANL-W has been using other M&O contractors' approved vendor lists as a bidders list. Because these vendors have already been approved by the other contractors, ANL-W expects that their QA systems can be quickly approved with little additional effort. However, this process may result in cases where the review conducted by ANL-W does not

conform to the requirements of ASME-NQA-1, Supplement 7S, paragraph 5, with respect to supplier performance evaluations.

Document control program weaknesses and deficiencies are also discussed in Section 4.5.2.1, Concern 0A.7-1, of the ANL-W Safety and Health Subteam Report. The lack of procedures and inadequate procedures are also discussed in Section 3.5.8, Finding IWS/CF-2; Section 3.5.7, Findings RAD/CF-6 and RAD/CF-7; and Section 3.5.5, Finding TCM/CF-2.

Self-Assessment

The overall ANL-W self-assessment did address this finding.

EG&G Idaho, Inc.

EG&G has not formally transmitted to ID the matrices showing compliance with DOE Order 5480.19 for its facilities. The level of compliance acknowledged by EG&G, the fact that significant corrective actions have only been implemented in the last few months, and the deficiencies observed by the Tiger Team indicate that INEL management should have taken a more aggressive approach to implementing the DOE Order.

The EG&G Waste Management Department has clearly acknowledged shortcomings in the area of conduct of operations and has been aggressively attacking identified problems since January 1991 through improvements to procedures and facilities, management assessments, and training.

The Waste Experimental Reduction Facility (WERF) is under a self-imposed shutdown (since February 1991) due to conduct of operations deficiencies, including several Operational Safety Requirement violations, inadequate procedures, operator training deficiencies, and operator complacency. An Operational Readiness Review is in progress. However, ID had not documented any official acknowledgement of the shutdown, or given any expectations or requirements for restart. Numerous procedural, training, and assessment corrective actions have been instituted and are in progress. However, the Management Subteam identified several deficiencies related to conduct of operations indicating continuing weaknesses in implementation:

- Undocumented operator aids were noted on the annunciator panels in the main control room.
- Several discrepancies were noted in the lock and tag logbook including cleared tags that had not been logged out or filed in the book. These errors had not been identified by the monthly audit of the logbook.
- There were several signature discrepancies in the daily routine ventilation operating procedure, including a missing shift supervisor's signature.
- An Operations Department deficiency tag was being used as an isolation warning tag for isolating equipment since November 1990 and had not been logged in the deficiency logbook.

A large number of concerns related to conduct of operations issues at various EG&G facilities were identified by the Safety & Health Subteam. Examples include deficiencies in logkeeping at the Advanced Test Reactor (ATR) (Section 4.5.1.3, Concern OP.7-1 and Section 4.5.1.14, Concern RP.10-1), shift turnovers at ATR (Section 4.5.1.3, Concern OP.7-2), operator aids at ATR (Section 4.5.1.3, Concern OP.3-1), drawing and procedure control at various facilities (Section 4.5.1.3, Concern OP.3-2 and Section 4.5.1.4, Concern MA.8-2), improper changes to procedures (Section 4.5.1.4, Concerns MA.3-3 and MA.8-3), and inadequate procedures and failure to follow procedures (Section 4.5.1.4, Concerns MA.4-1, MA.2-3, MA.2-1, MA.3-3, MA.3-2 and MA.8-1; Section 4.5.1.6, Concern AX.6-1). (See also Environmental Subteam Section 3.5.4, Finding WM/CF-1, regarding improper handling of hazardous wastes, and Section 3.5.5, Finding TCM/CF-2; Section 3.5.7, Finding RAD/CF-6 and RAD/CF-7; and Section 3.5.8, Finding IWS/CF-1 and IWS/CF-2, regarding nonexistent or inadequate procedures.)

Self-Assessment

The EG&G self-assessment did address this finding, although much of the assessment focus is on the existence of formal procedures, not on implementation and personnel performance.

Morrison Knudsen-Ferguson of Idaho Company

MK-FIC has not submitted a matrix of compliance or action plan as required by DOE Order 5480.19.

Self-Assessment

The MK-FIC self-assessment did not identify this finding.

Rockwell-INEL

A management overview of Rockwell-INEL SMC activities in support of the implementation of DOE Order 5480.19 was performed and indicated that Rockwell to date has not complied with the Order requirements. Various actions are in progress including an overarching goal established by the general manager, which was provided to all employees, emphasizing ES&H policy and requirements for accountability, management plant walkdown, and striving for continuous improvement. However, these efforts are in the early developmental stages, and required actions are not prioritized to ensure proper application of resources. The Rockwell Production Department Director estimated that 2-3 years would be necessary to achieve implementation with the order; however, because the operation at SMC is principally automated fabrication, the implementation schedule could be significantly decreased with proper management emphasis and prioritization of resource allocation. In preparing for transition with their replacement, Rockwell-INEL (SMC) management has reviewed prior transfers such as Rockwell to EG&G at Rocky Flats, Rockwell to Westinghouse at Hanford, and Exxon to Rockwell at INEL. Rockwell advised that approximately 6 weeks should be available to transition to the new contractor prior to their departure; however, the Tiger Team believes that this is insufficient time for an orderly transition to ensure continued ES&H improvement on a reasonable time scale. Indicated below are the areas observed and examples supporting this conclusion. Concern also exists that

the ID program and support office emphasis and follow-up has lacked aggressiveness in management of the contractor in this regard.

Planning to achieve timely implementation of DOE Order 5400.19 has been insufficient and needs aggressive action by Rockwell-INEL, its replacement contractor, and ID as indicated by the following examples:

- DOE Order 5480.19, Conduct of Operations, has not been implemented at SMC. Initial steps have been taken to formalize operations to meet some aspects of the order. A SMC matrix of compliance for DOE Order 5480.19 has been put together. An updated Status, dated June 21, 1991, revealed that the matrix is still in draft form, and the draft issue does not adequately address the level of compliance with the Order.
- The ID SMC Program Office provides project oversight of Rockwell SMC for ID and serves as the DOE/Army interface organization for the Project. DOE Line program office ES&H oversight at SMC is informal and undocumented. Observations noted during infrequent management walkthroughs are not identified on any formal or informal tracking system, and closure is not followed. These observations indicated the review was primarily a housekeeping and maintenance review that did not include performance and programmatic attributes. The SMC program office personnel do not have adequate ES&H and Conduct of Operations experience or training. The one person with appropriate ES&H experience has been on loan to the PRIME program since the fall of 1990.
- Program elements originally classified were later unclassified, and application of DOE Orders was assessed; a matrix of DOE Order 5840.19 was developed and submitted to DOE, with no official DOE response. A final matrix is due to DOE on July 31, 1991.

The procedure hierarchy is currently being modified to transition from the former organizational hierarchy to a functional one, per Policy Directive PD.01. However, the adequacy of current procedures needs further review, in addition to hierarchy redesignation being performed, to ensure that appropriate information is provided particularly as related to log and tag lockout information and auditing as indicated below.

- Work orders are computer generated and issued by maintenance. Interdepartmental review (e.g., by QA) was not evident. Closure of work orders does not readily correlate with lock and tag closure.
- A deficiency identified during a lock and tag logbook audit in one facility was documented by reentry of the original tag number into the logbook with the audit date posted rather than the date the tag was initially issued. This made it appear that it was reissued on the date of audit, which made it difficult to determine when it was originally issued.
- No turnover to the maintenance back-shift supervisor was indicated in the day shift log. The back-shift utility supervisor is the

senior onsite person when the production shift is not present, particularly Friday through Monday. The utilities logbook does indicate with a single statement that a turnover occurs; however, it does not describe major activities or problems.

- The logbook format for lock and tag is specified in QP 14.1.1; however, in an attempt to improve the log keeping in the Phase I and Phase II Facilities, lock and tag information logs have changed requirements without a Document Change Request Form being processed.

The Safety and Health Subteam identified concerns with drawing control (Section 4.5.3.1, Concern OA.7-5) and a lack of procedure reviews (Section 4.5.3.3, Concern OP.3-3). The Environmental Subteam identified concerns with nonexistent or inadequate procedures (Section 3.5.4, Finding WM/CF-1; Section 3.5.7, Findings RAD/CF-3 and RAD/CF-7).

Self-Assessment

The SMC self-assessment has partially addressed the concerns identified above; not included are the planning issues or adequate resolution of the procedure items discussed above.

Westinghouse Idaho Nuclear, Co.

Significant weaknesses exist in the WINCO implementation of DOE Order 5480.19 for the conduct of operations at the Idaho Chemical Processing Plant (ICPP). Many policies, procedures, and the expressed expectations of management are not being followed consistently and completely at the working level. A pervasive lack of attention to detail, failure to follow procedures, and inadequate QA documentation were identified for numerous activities at ICPP:

- Personnel and system safety lock and tag records and audits (for "caution" and "danger" situations and configuration control for temporary modifications) were inconsistently, improperly, and incompletely documented. Examples include audits that do not have all the required determinations documented, lack of completed audit forms in the log book [required to be retained for 6 months, but only one (June 4, 1991) log was located in the Separations Area logbook], and inconsistent entry of tag dates.
- Recording of the evaluation and corrective action for out-of-specification instruments noted on operator round sheets was inconsistent and incomplete.
- Specific directions to maintenance and operations crews provided by management in the Plan of the Day (POD-shift orders at ICPP) constitute procedure changes that had not been reviewed and approved by utilizing the required formal procedure change process.
- The twice-per-shift visual inspections of VES-FA-141 and 142 sumps, directed by management in the POD from June 21 through 28 because level instrumentation had been taken out of service, were not documented on shift operating logs. In general, sump

inspections were only documented on the routine (and legally mandatory) daily RCRA record data sheets.

- Completed operating procedures are filed in the production records storage area with missing pages and improper signoffs. Pages 2 and 4 were missing of Chemical Plant Operating Procedure (CPOP) 4.5.5.30, dated March 29 and April 3, 1991. Based on the operator's annotations of adjacent pages of the procedure, the signoff steps on these pages had apparently not been completed.
- Completed Work Order 130239 was filed with unsigned QA inspection points.
- The above described QA signature discrepancy was improperly corrected on June 26, 1991, by WINCO Quality Control (QC) and QA on the completed and filed work order without initiation of an Nonconformance Report or surveillance form as required by WINCO procedures.
- A QA verification to witness system operational testing, required on Work Order 130239, was apparently bypassed by operations. The requirement to verify the testing was deleted from the work order approximately 3 months later without issuance of an Nonconformance Report, surveillance report, or any formal reaction by the WINCO QA Department.
- Improper and unauthorized pen and ink changes were made to work orders, procedures, and batch transfer sheets in lieu of using the formal procedure change process required by WINCO procedures. In two performances of CPOP 4.2.18.1-A (completed on May 4 and 7, 1991) valve positions required to be verified in one position were noted to be in the opposite configuration, although the step was still signed off as complete. In one instance it was noted the valve was "danger"-tagged closed, with no justification for this change in configuration and its potential effect on the evolution being performed with that procedure. In another instance, a hand-written note stated the valve was closed and an alternate pump flowpath had been used.

Other examples were observed on several performances of crane preoperational test procedures for fuel movement in the Fluorinel Dissolution Process and Fuel Storage (FAST) Facility. Evolutions performed on different days, in one instance 21 days apart, were documented on the same procedure in violation of procedural requirements that required completion of a new procedure. Steps were also incorrectly signed on one day and as a result were not signed off at all for actions required to be performed on the subsequent day. See CPOPs 4.5.4.8 and 4.5.5.30 completed on March 29 and April 1, 3, and 22. See also Work Order 132738 (closed April 11, 1991) for deletion of prerequisite steps to isolate a system prior to performing maintenance. See also liquid waste transfer sheets for sump pumpouts in the Separations Area on June 25, 1991.

- Post maintenance/post modification testing requirements and performance were inadequately specified and documented on work orders. This included specifying that no testing was required after replacement of overload relays for a "vital" pump (Safety Class II) on Work Order 132857 (completed on April 4, 1991). The specific type of testing required is seldom adequately defined on the work order, and the test procedure number and the actual tests performed are not documented.
- Production personnel were unable to readily retrieve completed liquid waste transfer test procedures requested by the Tiger Team, and a backlog of completed procedures (QA records) were improperly being stored in cardboard boxes pending filing. This condition does not meet WINCO QA procedural or NQA-1 requirements.
- Design change documents were not issued to control and document the permanent removal of a valve and piping associated with Work Order 130239.
- The Gaseous Waste Processing New Waste Calcining Facility (NWCF) Out-of-Service instrument log sheets dated June 4, 1991, and for the Calcination Facilities dated June 6, 1991, have missing information related to the operability of Group I instruments (which serve a primary role in monitoring or controlling technical specification/standard parameters). Instruments that were specified as required to be in service were not documented as either being operable, or having a corrective work order in place.
- Numerous deficiencies were still open on June 24 that had been identified in the monthly periodic procedure reviews (PPRs) of controlled procedures in the Emergency Operation Center procedures manual, conducted in April 1991.
- The following discrepancies were noted in Work Order 134001, closed on May 21, 1991, which was issued to as-build and load test a fuel cask lid lifting device:
 - Lift test verification was signed off by QA on February 21, 1991, and Operations signed off that the test tag was attached to the lifting device on February 26, 1991. The attached procedure is signed off by QA and Operations as having a test date of March 28, 1991.
 - There are two Nondestructive Examination (NDE) inspection records in the package dated February 8 and 21, 1991. One is signed off by the QC inspector, his supervisor, and a Quality Engineer; and one is only stamped by the inspector.
 - A work order change was issued on March 28, 1991, to add instructions to test and inspect the lifting adapter. This was after construction had been performed and NDE sheets had been completed. Numerous "N/As" and crossouts were entered on the procedure.

- A second work order change was issued on April 2, 1991, (after the testing and inspection was completed) deleting the installation requirements including fastener torque. The engineering justification was that a "visual examination of the bolts indicates no detectable damage," which is an inadequate justification.
- It is unclear exactly what kind and how many load tests were performed. Personnel involved could not determine what had occurred or whether the device and fasteners could have been overstressed.
- An Engineering Design Input document, under Design Criteria, page 5, states that traceability for the attachment bolts must be maintained (number of bolts used, load test same bolts, and use only those bolts), but no documentation attested to the quality or traceability of the bolts used in the work package.
- The procedure attached to the work order required that a rigging sketch be attached to show test configuration. This step was marked "N/A", and no sketch was attached or could be retrieved by Production personnel.

In addition, this work order had been flagged by the Job Control Center as having been worked without the required planning (procedure), and package details were reconstructed by the personnel involved. On April 2, 1991, Design and Systems Engineering, the Facility Manager, and Quality Assurance signed a memorandum that "considered this item closed." No formal documentation, such as an Nonconformance Report or Assessment Report, was generated to address this issue formally and determine root causes. In addition, this review group and the Job Control Center that closed the work order failed to identify the above deficiencies.

Operator knowledge of the safety envelope is deficient in that it is limited to specific situation information contained in related operating procedures that identify specific parameters as safety limits, technical standards, technical specifications, limiting conditions for operation, and limiting control settings. While the documentation is satisfactory, the interrelation of specific actions that potentially could reduce the safety margin is not defined.

The prioritization process for the large number (3800) of open work orders is ineffective in ensuring that ES&H considerations are given an appropriate level of importance. An effective system has been developed, but is only being used on a trial basis in one ICPP section.

Some administrative and operations procedures lack the specificity and human factor considerations necessary to facilitate effective implementation. Examples include WINCO Production Procedure (WP)-10 (Lock & Tag), WP-12 (Work Orders), production standard operating procedure P.O. 5 (Control of Procedures and Procedure Changes), and Fuel Transfer Procedure 4.5.4.8.

WINCO instructions for preparation of Purchasing Information Sheets (PINS) do not include a requirement that QA be addressed when considering the vendor's qualifications (Item VI, Preparation Guide for Letters Requesting DOE Approval). Item VI calls for a discussion of the proposed vendor's qualifications that support the recommended award. With respect to those procurements that are to be placed only with vendors whose QA systems have been evaluated and approved, the status of the vendor's QA system is a cardinal vendor qualification, and must be met before the award may be made. Therefore, Item VI should include, when necessary, a concise statement regarding the vendor's QA system. This would then support the summation (Item XII) and the award recommendation. Without addressing the QA requirements, the information in the PINS is incomplete and does not fully support a recommendation of award to the selected vendor. This information may be available elsewhere in the contract file in the form of a completed Bid Evaluation Procurement Release Form or elsewhere in the quality records package, but it should be addressed in the body of the PINS because, when applicable, it is a condition that must be met by the vendor before the purchase order or contract may be awarded.

Numerous examples of inadequate procedures and failure to adhere to procedures at WINCO were identified by the Environmental Subteam in the areas of Air, Waste Management, and Quality Assurance.

Self-Assessment

The WINCO self-assessment partially addresses this finding. The self-assessment has one finding that states that the WINCO conduct of operations program has only begun, has not matured, and program elements have not been implemented. No specific assessments are included and no conclusion are provided as to the adequacy of the progress toward implementation.

Others (MSE)

MSE, Inc. (Component Development & Integration Facility in Butte, Montana) submitted an inadequate response in August 1990, but DOE did not respond to the submittal until July 19, 1991, after the issue was raised by the Tiger Team.

FINDING MF-15 Quality Assurance: Department of Energy Field Office, Idaho

The Department of Energy Field Office, Idaho, has not adequately implemented Department of Energy Field Office, Idaho, requirements for the Quality Assurance program at Idaho National Engineering Laboratory as required by DOE Order 5700.6B.

Discussion

DOE Order 5700.6B, "Quality Assurance," sets forth the policy, requirements, and responsibilities for plans and actions that ensure quality achievement in DOE programs. ID Order 1120.A2, "Organizations and Functions of the Idaho Operations Office," details the responsibilities of QA Branch Chief. These orders are not being effectively implemented by ID at the INEL.

- The QA plan and action required to implement the state policy of DOE Order 5700.6B have not been issued for ID.

- ID program offices have not developed and approved QA implementation plans and procedures.
- EH-1 has not reviewed and approved field organization implementation plans or provided formal guidance and direction to ID QA other than issuance of DOE Order 5700.6B.
- No internal (to DOE) QA Department assessments have been performed of ID's implementation of DOE Order 5700.6B.
- The ID QA Branch is understaffed, both in authorized and filled positions.
 - Only three QA positions and a branch chief are authorized for the independent QA function at ID. The independent QA organizations at comparable DOE sites have authorized staffs at least 50 percent larger.
 - Since the reorganization in October 1990, there has been only one individual in this Branch. A second individual has recently been hired. The Branch Chief position has not been filled since the reorganization.
 - There has been no manpower review or study performed to properly establish the appropriate level of staffing required to fulfill the responsibilities of the QA Branch.
 - The QA Branch performs audits using, almost exclusively, auditors from contractor organizations with the lone DOE staff member acting as the lead auditor.
 - There have been no ID QA audits of WINCO for over 3 years.
 - Only one audit has been performed in the first 7 months of 1991.

Several other weaknesses were identified with the implementation of the QA program by ID.

- Audit findings are now being tracked and closed out by the ID Program Offices, not the QA Branch. The QA Branch does not even concur or approve closure. The process is not defined for independently ensuring close out and verification of QA findings against ID organizations, such as will occur at RESL and FPR.
- ID QA Branch surveillance findings are not formally tracked to closure. The individual identifying the issue is responsible for closure, and the documentation and verification of surveillance finding responses and corrective actions were not readily retrievable.
- DOE Order 5700.6B is not being adequately implemented at RESL. Although an upper tier QA plan has been issued, implementing plans and procedures are only in draft form and only a few branch level procedures are even in draft form. RESL does not have the

in-house expertise to develop and implement an effective QA program and has not requested or received guidance or oversight from other staff who have the appropriate QA knowledge. As a result of a ID QA audit conducted in April 1990, which identified numerous QA program deficiencies at RESL, RESL requested and received budgeting for 0.5 QA full-time employees. However, RESL took no action to acquire the authorized assistance. In addition, many of the corrective action commitment dates have not been met. For example, Branch Quality Assurance Procedures Manuals were to be submitted by January 31, 1991, but still have not been prepared or submitted.

- See Management Subteam Finding MF-4 for a discussion of the lack of QA involvement in line organizations' Quality Program Plans. (See Section 4.5.3., Concerns QV.1-11, QV.1-12 and Section 3.5.1, Finding Air/CF-7; Section 3.5.6, Finding QA/CF-1; and Section 3.5.7, Finding RAD/CF-1 for other examples.)

Self-Assessment

This finding was partially addressed in the ID (the lack of resources and its impacts). The RESL self-assessment did address the lack of implementing QA Program Plans but not RESL's failure to obtain QA assistance.

FINDING MF-16 Corrective Action

Department of Energy Field Office, Idaho, and Idaho National Engineering Laboratory contractors have been ineffective in identifying significant Environmental, Safety, and Health problems; determining the root cause(s); and implementing timely and effective corrective action.

Discussion

The Tiger Team identified numerous examples where the management of ID, AAO-W, and various contractors has failed to demonstrate aggressive and effective control over significant problems at INEL facilities. (See Section 3.5.5, Findings TCM/CF-6 and TCM/CF-7 for inadequate corrective actions related to the storage and cleanup of PCBs at INEL.)

Idaho Chemical Processing Plant Operations

WINCO management and DOE have not taken proactive, aggressive action to achieve compliance with DOE Order 5480.19 for the conduct of operations at the Idaho Chemical Processing Plant (ICPP). Actions taken have been primarily sporadic and reactive, and significant weaknesses and performance deficiencies persist as detailed in Finding MF-14. Management does not appear to fully understand or accept the significance of the level of noncompliance. Without a reasonable basis, management corrective actions state that the ICPP performance level was excellent in the past, and imply that due to "new" requirements, some incremental improvements are all that is required. The imperativeness and urgency of strict procedure adherence are not clearly communicated. Both WINCO and DOE management have demonstrated a tolerance for noncompliant performance and untimely correction of fundamental program weaknesses.

In May and June of 1991, a WINCO consultant conducted a performance-based conduct of operations assessment of the six major activities at WINCO. This assessment has been described by management as needed to fully understand the level of noncompliance for the various conduct of operations criteria and to establish a baseline for each major facility. Concerted action was to be taken based on the finding of the Tiger Team and the consultant. While this independent assessment is certainly laudatory and useful, the results do not reflect any substantive information that had not already been identified by WINCO and DOE assessments performed as far back as December 1989.

On February 2, 1990, WINCO issued a detailed self-assessment of then current plant operations against the Institute of Nuclear Power Operation guidelines indicating that approximately 50% of the 332 guidelines were not being fully implemented. Many of the identified deficiencies remain open to date (18 months after identification), and some items considered as complete in the May 31, 1991, update of the action plan are either addressed only by a draft procedure, or have been ineffectively implemented. WINCO has not prioritized the findings and action plan tasks resulting from the initial review.

WINCO has not clearly identified the root causes of the noncompliance with the Order, developed and documented overall conclusions from the assessment, prioritized the identified corrective actions, or formally reassessed the progress of implementation (other than quarterly updates of individual action plan items identified before the Order was issued, which do not reflect significant progress).

Management oversight activities (including WINCO QA audits and surveillances; management assessments; and ID, DOE-HQ, and WINCO Operational Readiness Reviews) have failed to identify and resolve fundamental problems in the implementation of conduct of operations at the ICPP. Following are examples that illustrate this lack of aggressive oversight:

- QE Surveillance QE-91065, Annual Instrumentation Assessment, completed on April 5, 1991, noted that over 8% of the instrument calibration records reviewed had discrepancies. This surveillance was "closed" when issued for information; no observation or violations were noted. This makes it appear that an 8% error rate in a critical activity, such as instrument calibration, is considered acceptable at WINCO.
- In most cases, the corrective actions accepted for Nonconformance Reports and surveillances address only the specific issue raised; not the reason why or any long-term corrective action. Often the QA verification is only a check that training has been performed or that paper has been issued; not a reinspection of the original subject matter to verify that the stated corrective action was effective.
- Many surveillances identified "observations" or "concerns" (as opposed to violations of specific requirements), but did not require responses and accepted correction of the specific discrepancy as sufficient. Examples where no response was required include:

- Surveillance 0043, WINCO Tagout Logs, (November 1990) identified discrepancies on up to 8% of the tags or tag entries in any one area and identified discrepancies in 11 of the 14 logbooks reviewed. This continuing deficiency was also observed by the Tiger Team 8 months later.
- Surveillance 0048, Chemical Labeling and Storage, (December 1990) identified eight violations of proper storage and labeling of hazardous chemicals in Bldgs. CPP-659, CPP-660, and CPP-663. Because these items were corrected on the spot, they were not required to be addressed in a formal response describing why these violation occurred and actions to prevent recurrence.
- A surveillance to evaluate the implementation of corrective actions defined by the Standing Root Cause Committee, which is intended to mitigate unusual occurrences at the ICPP, identified three "major concerns," but did not require a response or follow-up review. These concerns included "a tendency to correct only the specific reported occurrence without consideration of systematic problems" and "awareness of procedures or lack of procedures to control the reporting of corrective actions was prevalent."
- A WINCO QA audit performed in August 1988 identified an inadequate material traceability program at WINCO. A task team appointed to resolve this issue declared the task complete in August 1990 (2 years later). A subsequent QA verification surveillance indicated an inadequate and ineffective program. A Corrective Action Request (CAR) was issued in September 1990. The CAR includes 12 action items, the last of which are due for completion by October 31, 1991, over 3 years after identification. A QA verification of effectiveness for these actions will still be required.
- Work Order 134001, completed on May 21, 1991, to as-build and load test a fuel cask lid lifting device, contained numerous discrepancies including test verifications signed off 1 month prior to the date shown on the test procedure, duplicate NDE records with different dates, incorrect pen and ink changes to the procedure, deletion of inspection requirements after-the-fact, issuance of a procedure change for test and inspection after the fabrication and NDE had been completed, no traceability on fasteners as required by engineering documents, and rigging sketches required by procedure not in the package.

This work order had been flagged by the Job Control Center as having been worked without the required procedure, and the package details were subsequently reconstructed by the personnel involved. On April 2, 1991, Design and Systems Engineering, the Facility Manager, and QA signed a memorandum that "considered this item closed." No formal documentation, such as an Nonconformance Report or Assessment Report, was generated to address this issue formally, determine root causes, and ensure appropriate corrective action. In addition, this review group and the

Job Control Center, which closed the work order, failed to identify the above deficiencies.

Although thorough surveillance assessments are being performed and documented by chemical processing plant Site Representatives, the responses from WINCO often do not fully address the findings or the surveillance report requests for response. ID does not appear to take an aggressive posture regarding untimely and inadequate or erroneous responses and overall inadequate corrective actions. Many inadequate answers have been tacitly approved without rejection or immediate request for resubmittal. For example, failure to follow procedures and inadequate procedures have been documented repeatedly in the last 9 months on surveillances, strongly worded separate correspondence to WINCO, and in various Operational Readiness Reviews. However, WINCO has been authorized to start up several phases of the plant processes in the last few months without effective corrective action by WINCO on this critical issue. WINCO's responses to the DOE surveillance findings are repeated assurances that the "safety culture" is being changed, much progress is being made, and people have been "reminded" of the need for procedure adherence. However, the violations continue.

- An EH Site Safety Representative monthly report for October and November 1990 identified numerous conduct of operations concerns at the New Waste Calcining Facility (NWCF) concluding in the need for significant improvement in WINCO waste processing operations." However, the findings in the EH monthly reports were not formally tracked to closure by ID or WINCO, and responses are not required from the contractor. In November 1990, both WINCO and ID completed an Operational Readiness Review (ORR) of the NWCF, and startup was authorized. Additional ORRs were performed by WINCO and ID for Custom processing (September 1990 through January 1991), for and the Second and Third Cycle Extraction process (April 1990 through April 1991), and for the Denitrator (April 1990 through April 1991). These ORRs are well structured and conducted with formal procedures with step-by-step signoff by all levels of management in operations, maintenance, engineering, and QA. However, the identification by the Tiger Team of significant deficiencies in performance of conduct of operations activities at WINCO would indicate that the WINCO and DOE ORR processes do not focus adequately on implementation, but primarily on the existence of procedures, documents, and hardware items. Additional management attention is required to ensure that ORRs are effective in identifying and resolving all pertinent conduct of operations issues.

EBR-II Design Control Audit and DOE TSAs of EBR-II and the Hot Fuel Examination Facility

The issuance and processing of Audit 90-10, performed by the ANL-W Office of Quality Assurance, demonstrate an improper documentation of deficient conditions, untimely and inadequate responses and corrective actions, lack of systems to track open issues, a significant lack of or inappropriate ANL-W supervisory and management involvement, and inadequate DOE oversight.

Audit 90-10, "EBR-II Design, Procedures, Documents, Processes and Record Controls," was initiated in January 1990. During the audit, it was determined that the findings would be issued in a report called an appraisal, rather than an audit. ANL-W has no procedure that defines or details the process for QA appraisals. No documentation exists to detail or justify why the audit was changed to an appraisal.

On June 19, 1990, a "draft" report of the appraisal was issued to "distribution," without the signature of the preparer or any approval by QA management, and without specifying any required response or action. This draft appraisal identified 98 observations related to the EBR-II design and design change process, generally describing extensive and significant deficiencies in the program.

The EBR-II response and corrective actions have been untimely and inadequate. On June 4, 1991, the EBR-II Engineering Department formally responded to the "draft" appraisal. The response did not provide any summary evaluation of the issues and did not address 11 of the concerns, which were deemed to be the responsibility of the ANL-W Support Division or the Fuels & Process Division. There is no evidence that other ANL-W Divisions had been informed of these concerns, or requested or directed to take action or provide any response. Consequently, these organizations have not taken action or responded. In addition, the responses to the individual appraisal observations provided by EBR-II Engineering are superficial and inadequate in many instances. For example, a concern indicating that approved drawings often did not contain information needed for fabrication, such as weld sizes and types, material callouts, etc., was answered as follows: "Instance where required information not being provided is not known, however, the response from item 1 should help improve the situation if there have been deficiencies." The existence of the problem could be easily verified by asking the auditor for examples or performing an appropriate sample of issued drawings. Appropriate, specific corrective actions could then be identified and implemented. A similar superficial evaluation was provided to an observation that there were numerous deficiencies in issued work packages, such as the inclusion of unapproved and superseded drawings, conflicts between work statements and drawings, inadequate weld details, and lack of material traceability requirements. The response was that EBR-II Engineering disagreed that it was a generic problem, but did not indicate any justification for this position, such as a review of issued work packages.

There is no documented evidence of involvement by the EBR-II Director, the Site Manager, the ANL-W Quality Assurance Manager, or other ANL senior managers in ensuring timely, appropriate, and effective resolution of these issues. In addition, resolutions of the "appraisal" findings were not formally tracked or issues elevated as a management concern, in part, because ANL-W does not have adequate open item tracking systems (ANL-W, Division, or QA).

A DOE NE-80 Quality Assurance Inspection in December 1990 identified, as one of 57 concerns, that "the practice of changing audits to appraisals, which do not require response to the findings, defeats the purpose and benefits of an independent audit program...." The May 13, 1991, ANL-W response indicates only that the QA Manual will be revised to define appraisals and detail their use, and that appraisals will not be performed until this revision has been made. It does not address the specific appraisal in question, why it

occurred, or if any action was necessary for the specific issues involved. There is no evidence that AAO-W was aware of the specifics of this issue or pursued a timely and effective resolution.

A second ANL-W and AAO-W corrective action issue was identified related to the resolution of the findings resulting from the DOE TSA conducted in August 1988 at EBR-II and in September 1988 at HFEF. The AAO-W Commitment Report lists eight EBR-II items open (all Priority 1) and 16 HFEF items open (10 Priority 1) with action due dates ranging from December 31, 1991, to July 31, 1993. Many of these issues are procedure, performance, or program related and certainly should not require over 3 years to resolve. AAO-W personnel indicated that the priority rankings were not assigned based on an evaluation of the significance and that many of the action due dates were commitment dates determined solely by ANL-W. DOE has not demonstrated appropriate control over resolution of these issues.

Violations of Acceptance Criteria at the INEL Sanitary Landfill

The INEL has a plan to cease disposing of waste in an INEL sanitary landfill and to use county landfills when the current INEL landfill is full in 1992. A Task Team was formed in late 1990 to address this issue and initiated a number of corrective actions to improve performance. The Task Force last met in February 1991. However, despite the actions taken, the number of violations of the Waste Acceptance Criteria has been, and continues to be, high (513 violations, including 16 radioactively contamination incidents in the last 9 months). After trending downward for several months to a low of four in May 1991, violations soared to 68 in June 1991 with half the tonnage of the previous month. EG&G, DOE, and the waste generators have not been effective in reducing the level of noncompliance:

- Trends and the frequent or significant violators have not been identified.
- Interim goals have not been established, and an effective plan to achieve the long-term goal of zero defects has not been established.
- Violation data published monthly by EG&G have not been normalized to reflect relative significance or ratios of the violations, and waste generators are only provided their own tally of violation and the total (no comparison to other generators). No analysis, action items, or required responses are provided with the published data.
- On January 10, 1991, the Waste Management Department at EG&G issued a letter to ID discussing the ineffectiveness of the actions being taken when a waste generator violated the Acceptance Criteria and requesting that DOE require waste generators to report violation as an Off-Normal Occurrence Report in accordance with DOE Order 5000.3A. No action has been taken to date by DOE with regard to this request.

The untimely and ineffective actions by INEL management to address improper disposal of radioactive and hazardous materials in the INEL sanitary landfill do not demonstrate a proper sensitivity to this environmental and public

interest issue. Significant changes will be required for INEL to achieve its goal of using public landfills in 1992. (See Section 3.5.7, Finding RAD/CF-6 for related discussion of this issue.)

Continuing OSHA Violations at the Fuel Processing Restoration (FPR) Construction Site

On January 16, 1991, the EH Site Safety Representative identified two Priority I events at the FPR construction site. These events involved (1) a December 1990 injury to a worker performing maintenance on a crane, and (2) an employee erecting rebar without using a safety belt, working from an unsafe scaffold, and working over exposed rebar without safety caps. At the same time, the Site Safety Representative identified other examples of personnel working over exposed and uncapped rebar. A Subsequent CAR was issued by the MK-FIC QA department on January 31, 1991, citing the issuance of numerous and repetitive safety discrepancy reports without formal responses, as well as specific additional safety violations identified by MK-FIC Safety personnel on January 30. The subcontractor, Ebasco Constructors, Inc., responded to the CAR on February 11 indicating that all corrective actions had been implemented or completed. However, in June the Tiger Team identified extensive, serious OSHA violations at FPR, including a Category I violation, as well as continued use of structures previously identified to be in violation of OSHA requirements. Subsequently ID and MK-FIC suspended construction activities at FPR.

ID did not have effective management systems in place to track significant open items and did not take appropriate action to ensure that corrective actions were prompt and adequate when the initial Priority I concerns were identified by the EH Site Safety Representative in January. MK-FIC and Ebasco management failed to ensure that corrective actions for the violations detailed in the CAR adequately addressed the root cause(s) and were effective in preventing recurrence. (See Section 4.5.1.2, Concerns QV.1-1, QV.2-3, and QV.5-1 for related corrective action issues.)

Self-Assessment

These issues are only partially addressed in the INEL self-assessments.

FINDING MF-17 Non-DOE Funded Work and Cooperative Research and Development Agreements

The DOE Field Office, Idaho, and EG&G have not formalized processes and procedures to ensure that non-DOE funded work proposals and Cooperative Research and Development Agreements receive appropriate Environment, Safety, and Health review.

Discussion

Review of ES&H concerns is necessary at the earliest practicable stage of any work contemplated by a DOE contractor whether DOE funded or otherwise. A commitment to perform non-DOE funded work should be prefaced by a review of how that work will be impacted by ES&H concerns and requirements. Whether the work may involve special permits, is unusually dangerous, involves hazardous or toxic materials, or may leave behind residual environmental hazards are necessary factors requiring consideration in approving non-DOE funded work

proposals. Until this year, the DOE Order covering non-DOE funded work did not expressly address ES&H concerns.

At INEL, the non-DOE funded work, often referred to as Work For Others (WFO), is predominantly performed by EG&G. Such work complements the DOE research programs by offering EG&G's unique expertise and facilities to other federal agencies (e.g., DOD and NRC) and to various other organizations (e.g., state and local government, private sector). Such work has a magnitude of \$120M in this fiscal year and represents approximately 20% of the operating budget of EG&G.

EG&G, operating under DOE-furnished Work For Others Guidelines, dated March 1989, has a formal, structured process to evaluate non-DOE funded proposals for technical feasibility, validity of cost estimates, use of subcontractors, and compatibility with INEL mission. The review process includes evaluation of the proposals by the line (performing) organization, and independent evaluation by the EG&G WFO Review Committee, which reports to the Manager of Administration. The guidelines include an "Environmental Review Sheet," the answers to which determine the need to complete an "Environmental Checklist." However, there is no requirement that either the review sheet or the checklist be completed by, or with the aid of, ES&H professionals; in practice, they are completed by the proposed project manager. Also, there has been no requirement that ES&H professionals be represented on the WFO Review Committee to review these documents or any other aspects of the proposed work. A March 22, 1990, EG&G memorandum required the inclusion, in all new WFO project packages, of an "Environmental Review Sheet" (even though the Guidelines dated a year earlier had already required it). However, the memorandum did not by its terms involve, and was not addressed to, ES&H professionals. Under this system, any consideration of ES&H issues has been provided by the originator/project manager and perhaps their supervisor, persons who may have no ES&H expertise and who have a potential conflict of interest in the outcome of such consideration. Consequently, unless competent ES&H review was subsequently performed by DOE as a part of its review and approval, EG&G and DOE were exposed to unreviewed ES&H risks.

Proposal packages are submitted by EG&G for review and approval to the ID WFO Coordinator in the M&O Oversight Branch, Contracts Management Division. At DOE, there has been no requirement for review of these packages by ES&H professionals or for membership of such professionals on the DOE WFO Review Committee. In the absence of a full and competent ES&H review, DOE was placed in the potential position of learning, for the first time after the proposal has been approved and funded, that ES&H concerns (e.g., NEPA, permits, fire safety) greatly increase the cost of the work or substantially affect the commencement or duration of the work, necessitating an awkward renegotiation with the sponsor.

DOE Order 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. Shortly after receipt of the order, ID commenced to revise the Work For Others Guidelines. The current draft of the guidelines does not address the matter of ES&H representation on the EG&G or the ID WFO Review Committees, although in other respects the draft is an improvement. As a result of Management Subteam observations, a July 2, 1991, memorandum from ID to EG&G was issued stating that both EG&G and ID will henceforth have ES&H representation on their respective WFO Review Committees.

These actions, together with an approved final revision to the guidelines, should provide reasonable assurance in the future that ES&H risks involved in non-DOE funded work are evaluated and minimized.

The Cooperative Research and Development Agreement (CRADA) is a recently developed mechanism under which a DOE contractor performs cooperative research on a topic of mutual interest with an industrial partner. The industrial partner can provide any combination of funds, personnel, equipment, and services, while the DOE contractor can provide all of the foregoing except funds. The Joint Work Statement serves as the cooperative research proposal from the DOE contractor to DOE. Once approved by DOE, it is incorporated into the formal CRADA document as an appendix.

At INEL, only EG&G is currently involved with CRADAs, because only EG&G, among the INEL contractors, has agreed to the inclusion of a CRADA clause in the prime contract with DOE; Westinghouse Corporation is negotiating such a clause which would be included in the WINCO contract. EG&G is the leader among DOE facilities in entering into CRADAs, with a total of four.

Neither EG&G nor ID has established procedures that require ES&H review of the Joint Work Statements that provide the bases for CRADAs. The Tiger Team has been furnished an undated draft EG&G Standard Practice entitled, "Drafting the Joint Work Statement," whose purpose is to provide guidance for researchers preparing Joint Work Statements. The document is essentially a restatement of the DOE-generated "Joint Work Statement (JWS) Fact Sheet," and is intended to be distributed to scientists and engineers in EG&G organizations that are likely to become involved in CRADAs. It does not recognize the necessity for ES&H review (either by the researcher or by ES&H professionals); it merely alerts the reader to the possibility that "miscellaneous issues may include...health, safety, and environmental issues." Since CRADA research may be viewed as an extension of existing R&D programs, the proposed work may be subject to review under EG&G Standard Practice 1.4.3 (currently under revision), which provides for a safety review of new or revised experiments. However, the draft CRADA and Joint Work Statement documents do not refer to the standard practice and even when the standard practice is operative, the decision as to whether a safety review is necessary is made by the researcher and not a ES&H professional.

When the CRADA package is received by ID from EG&G, it is reviewed by the program office and the Office of Chief Counsel (OCC). Neither of these offices have persons who are sufficiently trained in ES&H matters. There are no formal DOE guidelines or procedures in place regarding the CRADA review and approval process. DOE has a draft sample CRADA and draft "Stevenson-Wydler Guidelines." There is no reference to ES&H in the sample CRADA, and the only reference to ES&H in the guidelines is a sentence under the heading "Statement Of Work" that any ES&H issues "must be handled." There are no stated requirements for ES&H review prior to Joint Work Statement or CRADA approval, no model ES&H provisions for the agreement, and no required coverage of ES&H concerns upon termination or expiration of the project. A review of the file of a recent proposed CRADA between EG&G and Morrison Knudsen Corporation revealed that DOE review did not address any ES&H issues, although it is understood that OCC is considering the addition of language to the Termination article to cover costs associated with cleanup and other environmental issues at the conclusion of the project.

Self-Assessment

The EG&G self-assessment identifies the WFO issues of (1) no ES&H representative on the WFO Review Committee and (2) the need to improve existing ES&H checklists. The issues relating to CRADAs are not addressed. The ID self-assessment did not identify these issues.

FINDING MF-18 Radiological and Environmental Sciences Laboratory Conflict of Interest

Many of the authorities and responsibilities of the Radiological and Environmental Sciences Laboratory to function as the DOE accrediting organization for personal dosimetry, and thereby as the standard establisher in radiological and environmental sciences, are in conflict and do not comply with best management practices.

Discussion

Roles, responsibilities, and authorities of the RESL result in an organizational conflict of interest with respect to its dual roles as Administrator of the DOE Laboratory Accreditation Program (DOELAP) for personnel dosimetry and as technical support service provider to INEL and others.

Because RESL conducts DOELAP, it administers the performance evaluation program for whole body personnel dosimetry systems and acts as the lead performance testing laboratory. It receives applications, conducts test sessions, coordinates site visits, and recommends accreditation when appropriate. DOE Order 5480.15 requires all DOE contractor dosimetry programs to obtain and maintain DOELAP accreditation, which includes the program at the INEL. RESL also provides an applied research program for implementation of the neutron track etch dosimeter, which is planned for future implementation at INEL, and it serves as the DOE program manager for the EG&G dosimetry unit.

Potential conflicts exist in this situation. When EG&G Idaho implements the new dosimeter, the dosimeter will have to be accredited by RESL. RESL performs routine technical support services necessary to support the dosimetry program (e.g., measurement of neutron spectra) at the INEL, which RESL must then accredit. (See Section 4.5.1.14, Concern RP.5-5 and Section 4.5.1.1, Concern OA.2-4.)

In addition to being the functioning DOELAP for dosimetry, RESL has recently been chosen to develop DOELAPs for other areas of radiation protection. These include DOELAPs for bioassay measurement and extremity dosimetry. At present, participation in these new DOELAPs is currently voluntary; but, it is anticipated that accreditation will become mandatory. Additionally, ERWM at DOE-HQ is now setting up RESL to establish a DOE-wide QA oversight program for contractor laboratories that analyze samples in support of ERWM programs that also must come within the jurisdiction of the RESL DOELAP responsibilities as defined in DOE Order 5480.15. Both the new DOELAP efforts and the ERWM contractor checks are complicating the conflict of interest situation.

An additional issue with regards to RESL's DOELAP role is that the last independent oversight activity was conducted by the National Institute of Standards and Technology (NIST) in December 1984, and has not occurred since.

This is a problem since the RESL dosimetry accreditation program is traceable to NIST. Other responsibilities affected by this situation include RESL's designation as the official Reference Laboratory for the NRC, where its responsibilities include preparing reference standards to test the capabilities of NRC Regional Laboratories and NRC Licensees.

Best management practices include ensuring that a strong maintenance program for equipment is in effect. Unfortunately, maintenance at RESL is a combination of the landlord, EG&G Idaho, and RESL performed responsibilities that are not well defined and established. (See Section 4.5.3.4, Concern MA.2-1.) This same issue was found in the RESL health physics program (See Section 4.5.3.12, Concern RP.1-4) where RESL is not in compliance with DOE Order 5480.11 including program conduct, does not perform audits of its own internal program (See Section 4.5.3.12, Concern RP.2-1), and does not have a fully compliant ALARA program. (See Section 4.5.3.12, Concern RP.3-5.)

Self-Assessment

Some of these findings were covered in the RESL self-assessment.

FINDING MF-19 Environment, Safety, and Health Training

The Idaho National Engineering Laboratory contractors have not fully implemented comprehensive, proactive Environment, Safety, and Health training programs to ensure that only qualified staff are assigned to Environment, Safety, and Health duties.

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. Also, an effective training program should be conducted with a degree of formality, documentation, effectiveness validation, and record keeping commensurate with its central role in ensuring that only qualified staff are assigned to ES&H activities. Such a program does not exist at INEL, and in general, only scattered elements of effective training programs can be identified.

Argonne National Laboratory-West

The ANL-W training program is generally decentralized, informal, and poorly documented. The ANL-W S&H Team made a similar observation: "There is no comprehensive or formally implemented training program at ANL-W." (See Section 4.5.2.1.) Training of Health Physics Technicians is informal, undocumented On-the-Job Training (OJT), which ANL-W management concedes does not comply with DOE Order 5480.11. (Also see Section 4.5.2.6, Concerns TC.1-1, TC.1-2, TC.4-1, TC.9-1.) Similarly, Hazardous Waste Generator Training is informal OJT. Other examples of informal training include the following: Personnel associated with satellite waste accumulation areas are trained through group meetings and first responder awareness training, which is conducted from procedures and does not include testing to determine a level of achievement. (Also see Section 4.5.2.5, Concern TC.7-1, and Section 4.5.2.1.15, Concern PP.5-1.) The ANL-W training and procedure group is working on a centralized computer-based system to maintain training records. While five full-time trainers have been assigned to conduct ES&H training, there is no additional evidence that ANL-W management has a commitment to or plan for an effective sitewide ES&H training and

certification program that would systematically be used to determine training requirements; develop and apply training programs; verify the level of proficiency attained; and maintain a record to staff training, retaining, and certification. The S&H Team also observed the following lack of management commitment to a formal training program: "There is no ANL-W policy that requires a formal training program." (See Section 4.5.2.5, Concern TC.1-2.)

EG&G Idaho, Inc.

EG&G has placed added emphasis on ES&H training over the past year. For example, all employees are required to take Hazard Communication Training and annual refresher training, and over 500 managers and employees attended a 2-day Environmental Regulations Seminar and Basic and Advanced Requirements Awareness Program (RAP) training. In addition, EG&G established requirements for Environmental Coordinator Qualification in June 1991; certification of individual performance duties such as safety engineers, industrial hygienists, and fire protection engineers; qualification for qualification inspection and test personnel; and qualification of hazardous materials shippers. However, in spite of these recent initiatives, the EG&G training program can best be described as decentralized and in the developmental stages. As a result, the program suffers from a lack of standardization in the determination of training requirements, in the implementation of training, and in the quality of training.

Responsibility for determination of training requirements is decentralized; it is the responsibility of each line organization. Each organization applies its own standards to determine training applicability, the level of training compliance achieved, and the action plan to achieve compliance. As a result, a variable picture emerges of ES&H training throughout EG&G. For example, the Science & Technology and Engineering Departments have determined that they are nearly in full compliance, while the Waste Management (WMD) and ES&Q (ESQD) Departments determined they (WMD and ESQD) are at best only in partial compliance. While this situation may be in part due to the broader ES&H training requirements of ES&H professionals, EG&G management acknowledged that it is primarily a reflection of the fact that ES&H professionals are more knowledgeable about training requirements than other line organizations. As a consequence, non-ES&H line organizations may underestimate their training requirements and overestimate their degree of proficiency.

Training is provided by a variety of organizations including the Human Resources Department (e.g., career development, training), the Engineering Department (e.g., basic OSHA training), the Line Management Departments (e.g., job, career, and site-specific training), and trainers external to EG&G (e.g., OSHA Subpart and NEPA training). Since the training programs (e.g., job specific) administered by line management departments are not subjected to uniform standards for curriculum content or individual proficiency, the level of achievement that EG&G employees attain through training is highly variable.

By contrast, the training provided by the Human Resources and Engineering departments are offered to all employees and may be expected to be administered uniformly sitewide. However, there is no formal system to verify the level of proficiency achieved through this training. Similar shortcomings exist for external training; EG&G accepts rather than verifies the proficiency achievement claimed by the training organization.

Morrison Knudsen-Ferguson of Idaho Company

The MK-FIC training program is centralized under the ES&H Manager. Training and certification are aimed particularly at providing qualified construction safety specialists. Training requirements are determined by line management, and training effectiveness is evaluated through management assessments of performance. The Training Coordinator maintains the training needs and training records. In addition MK-FIC maintains a central file of the training records of its subcontractors. A formal documented assessment program to quantify the level of achievement and proficiency is not generally employed. MK-FIC has recently recognized the importance of OSHA and OSHA subpart training and has sought external training support to meet this requirement. However, MK-FIC still does not give sufficient emphasis to environmental training. An additional deficiency in the training program is fitness for duty; MK-FIC does not have a proactive program.

Protection Technology of Idaho, Inc.

PTI has a training program that has many elements of a strong, effective training and certification program. It is centralized under a Training Director who reports to the Deputy General Manager. An annual training needs analysis is performed by a specialist. Hazard communication training is provided to all PTI security inspectors on a contractor and site-specific basis. A trainer is assigned to each of the 18 INEL sites. Training proficiency and training records are maintained in a central location, and ID approves the Annual PTI Training Plan.

The weakness in the PTI training program is the need to place additional emphasis on ES&H training. The PTI mission is "to protect INEL from theft, sabotage, and other hostile acts that may adversely impact the national security or the health and safety of the public." As a consequence, the PTI training program is focused on the multitude of training requirements for an effective guard force (e.g., firearms safety, deadly force, bomb threats) with little attention to the traditional ES&H training requirements (e.g., hazardous waste generator training).

PTI has recently recognized that additional emphasis on ES&H training is required. PTI has identified a need for and plan to develop and administer the following training courses: site-specific, 24-hour OSHA Hazardous Operations; Safety Analysis and Safety Plans; and waste minimization and land disposal restrictions.

Rockwell-INEL

Rockwell-INEL has centralized training at SMC under the Manager of Training and Organizational Development (T&OD). The Rockwell Quality Assurance Program Manual (QP 2.4.1 dated June 4, 1991) details the training policy, applicability procedures, responsibilities, and interfaces for all SMC training. Training requirements are drawn from DOE Orders by technical and source experts. ES&H staff, Technical Training Coordinators, and training specialists develop the required training course in concert with technical experts in the organization requiring the training. The courses are then administered by training experts. Achievement level attained is determined by testing, and training records are maintained in a central training data base.

While conceptually sound, the training program is not yet fully implemented. Training requirements for a nuclear facility have not been fully satisfied. Also, Rockwell-INEL has not yet fully implemented a process to evaluate the effectiveness of a training program and to improve it. However, Rockwell-INEL has begun to develop a system to incorporate lessons learned and tracking and trending of performance indicators into the training effectiveness verification and improvement process.

Westinghouse Idaho Nuclear Company

ES&H-related training is centralized in the Production Department. Employee career development is the responsibility of the Human Resources Department, and QA and Security Training is conducted by cognizant organizations. WINCO has a Plant Training Five Year Plan, dated 3/26/91, founded on a centralized training organization, which details the resources (e.g., people, cost of facilities, and expertise) necessary to meet and/or exceed the training requirements of relevant DOE Orders. This plan appears to be the foundation of an effective training program.

WINCO does not have a fully implemented training program in place; the employee training needs identification and curriculum development are incomplete. However, a Training Program Accreditation Program Plan is in place to address these issues. Also, WINCO's approach to assess the effectiveness of training is limited to testing and interviews with trainees. The determination of training effectiveness does not include tracking and trending of employee performance and other performance indicators.

Self-Assessments

The EG&G, Rockwell-INEL, and WINCO self-assessments all identify this issue.

FINDING MF-20 Performance Expectations and Appraisals

Department of Energy, Idaho, and the Idaho National Engineering contractors have not communicated specific, measurable and personal Environmental, Safety, and Health responsibilities and performance expectations to each employee.

Discussion

ES&H excellence is rooted in individual performance; each employee represents a potential single point failure in the systematic quest for full compliance. As a result, specific, personal ES&H goals, objectives, and performance measures for all employees throughout an organization are the foundation of a highly effective and responsive ES&H culture. The central importance of individual ES&H excellence has generally not been expressed throughout INEL in personnel position descriptions, performance expectations, and appraisals.

Department of Energy Field Office, Idaho

The DOE position description and personnel performance evaluation system have the potential to clearly define, communicate, and measure performance expectations. The performance evaluation system as required by DOE Order 3430.3A is standardized throughout the DOE and affords sufficient flexibility (it is not a checklist) to provide management with an opportunity to communicate personal performance expectations. ID management has recently

directed supervisors to incorporate ES&H Responsibilities into performance plans and position descriptions. While nearly all performance plans and position descriptions now contain general ES&H responsibilities and performance expectations, ID management generally has not used this management tool to full advantage. Most performance appraisals still lack the specific, measurable position responsibilities necessary to define and evaluate DOE employee performance. Instead, common, difficult to measure performance expectations abound throughout the ID performance appraisals. These include, "insures that staff subordinates are engaged in conscientious efforts to implement, promote, and achieve compliance with all ES&H goals and requirements..." (a very common ID performance expectation) and the equally common and vague "assures compliance with environmental regulations and statutes including EPA, RCRA..." Specific, measurable performance expectations, such as "performance appraisals in scheduled quarter and issue reports within one month of completion of field work," are not frequently used requirements for ES&H surveillance. Active contractor oversight is also rarely found as a performance element.

The ID performance expectations and appraisals are also inconsistent with ID Program Manuals. For example, the Energy Programs Manual directs Branch Chiefs to "perform walkthroughs at least twice a month" and the Division Directors and the Assistant Manager of Energy Programs to "perform less frequent walkthroughs." These important performance requirements generally are not reflected in the performance appraisals. Similar observations are valid for the other ID Program and Support Offices (e.g., Office of the Assistant Manager for Nuclear Programs, OESHO).

Argonne Area Office-West

AAO-W uses the standard DOE Position Description and Performance Plan formats. The four AAO-W professional employees have very similar position descriptions and performance plans even though their responsibilities are different.

Examples of generic position description elements are:

Coordinates nuclear and environment safety and health protection programs, responsible for assuring full DOE and contractor accountability in the areas of nuclear safety and environment, safety and health Ensure that all facilities achieve and maintain full compliance with Federal and State environmental safety and health requirements.

Examples of specific elements are:

Reviews and recommends approval of the accreditation plans at EBR-II and HFEF.... Performs Conduct of Operations (INPO-type) reviews and evaluations of training programs.... Performs tours, audits, and normal and inspections of EBR-II, TREAT, ZPPR, NRAD, AFSR, HFEF, and FMF.

However, while specific, these performance expectations do not detail an acceptable frequency of activities (e.g., "evaluate training programs quarterly...conduct weekly walkthrough").

All performance appraisal plans had generic performance elements including the following:

Nuclear Safety, Quality Assurance (QA) and Environment, Safety and Health (ESH) Coordination: Coordinates the HQ, CH, ANL, Federal, State and Industrial/Academic Institutions so as to successfully plan and execute the assigned efforts in Nuclear Safety, QA and ESH; and Program/Project Management.

Oversight of assigned program/project management, construction, facilities management, utility operations/projects and activities related to Nuclear Safety, QA and ESH at ANL.

None of the performance appraisal plans contained elements or milestones specific to an individual or unique time period.

Argonne National Laboratory-West

ANL uses position descriptions to define individual responsibilities and authorities. All of the position descriptions reviewed contained generic ES&H statements. The S&H Team also observed the pervasive use of generic ES&H statement; the statement prescribed by the Laboratory Director for inclusion in all position descriptions is somewhat "motherhood" in nature and may not, of itself, foster an ownership of line safety responsibility. Each position description contains the following clause under primary activities:

All activities will be executed in compliance with ES&H responsibilities established by Argonne National Laboratories ES&H policies, work rules, and safe practices as they apply to work performed by self or personnel under supervision.

Each position description also has a generic element under measures of effectiveness, "Effective Implementation of Laboratory and Division ES&H policies, work rules and safe work practices." While these clauses are not quantifiable, they are discussed during each annual evaluation. While less than 10% of the position descriptions reviewed had specific ES&H requirements, specific, measurable ES&H elements were more common for direct line management. Examples of specific performance expectations include:

Must operate reactor and control work within constraints of the EBR-II technical specification, operating instructions, and the ANL-W health and safety manuals.... Makes periodic tours of all systems during each shift to verify that system parameters are normal and that equipment is operating properly.

ANL uses a performance plan that is closely linked to the position description. Formal reviews are held annually, and include a review of the position description, a review of progress using the position description as a guide, and the establishment of special goals for the next year. All performance plans contain a generic ES&H requirement on the standard rating form drawn from the position description: "Effective implementation of Laboratory and Division ESH policies, work rules, and safe work practices." Less than 40% of the performance plans contain a specific ES&H requirement. An example is:

To improve the overall quality of plant operation, ... needs to ensure that all problems are logged in area's log and that they are resolved

and the appropriate action is taken for repair/correction of the problems.

EG&G Idaho, Inc.

EG&G utilizes position descriptions to define individual responsibilities and authorities and the performance appraisal system to formally communicate performance expectations and to measure performance against these expectations. Position descriptions follow a standard format and are not generally revised until a position is vacated and the employment opportunity is posted. The majority of the position descriptions, with the exception of ES&H professionals, do not contain ES&H elements since they were written prior to EG&G's recent ES&H emphasis. Some have not been revised since 1985. While there is no formal requirement to place ES&H elements in new position descriptions, there is no plan to modernize these position descriptions until a position is refilled. Until the position descriptions contain specific ES&H responsibilities, EG&G management cannot fully imprint ES&H responsibility on the entire organization.

The content of employee performance plans and appraisals is defined in general terms by the Human Resources Department. However, the Human Resources Department guidance form is not a requirement and as a result the specificity with which individual ES&H performance expectations are communicated varies throughout EG&G. The General Manager has communicated specific, measurable ES&H performance expectations to his line managers. For example, his performance expectation of one line manager included the following: An outstanding Performance Rating will require "no notice of violations and no DOE reportable releases." His performance evaluation had similar specificity: "209 performance oversight and assessments (of manager's organizations) were performed which resulted in 23 findings which were promptly closed out." However, in general, similar specific performance expectations are not found throughout EG&G. For example, performance expectations of Unit Managers and individual contributions range from "make sure all procedures are in compliance" to "comply with all relevant ES&H procedures." These expectations are absolute and are not always achievable. Furthermore, they have not been customized to specific job responsibilities.

Morrison Knudsen-Ferguson of Idaho Company

MK-FIC is in the process of upgrading their position descriptions: the majority contain generic ES&H performance requirements and less than 5% contain specific ES&H performance requirements. As expected, the Manager for Environment, Safety, and Health has numerous ES&H activities in his position description, including:

Establish and administer indoctrination for safety, health, radiation safety and emergency response to satisfy DOE requirements.... Institute formal routine internal daily and spot safety and health audits of active construction work areas for compliance to OSHA, DOE and other regulations.

The Procurement Manager had the responsibility for "Being aware of and complying with all environmental, safety, and health requirements applicable to their surroundings and work environment," and "Implements the MK-FIC ES&H requirements into all subcontractor documents as necessary." By contrast, the

Vice President for Operations position description was not available for review and the Project Manager of the FPR Project only had one general ES&H element, "Responsible for ES&H compliance within the FPR Project." Of the performance plans reviewed, one quarter contained generic ES&H elements, and only one fifth contained specific ES&H requirements. The Manager for Environment, Safety, and Health had several general requirements such as "Responsible for environmental protection program for company." The Vice President for Operations has no ES&H in his performance plan, and the Project Manager of the FPR Project had one element, "Responsible for safety performance of direct hire and fixed price contract personnel." His rating noted that improvement was needed in the safety program of prime subcontractors. The Procurement Manager did not have any ES&H elements in his performance plan even though his position description had important performance requirements as noted above. (Also see Section 4.5.3.1, Concern OA.6-1.)

Protection Technology of Idaho, Inc.

Safety has traditionally been the primary emphasis in the PTI individual performance expectations and evaluation process. These expectations are expressed in job descriptions and performance appraisals. Individual performance expectations have emphasized firearms, aviation, and transportation safety since these activities pose the highest risk to PTI and other contractor employees. While safety still retains a primary emphasis in the performance expectation of employees, PTI is beginning to emphasize additional aspects of ES&H performance. For example, the PTI's parent organization, Day and Zimmerman, Incorporated (DZI), has placed the following expectations on the President of PTI: "The corporation (DZI) and its divisions (PTI) are to prioritize attention to ES&H with greater emphasis than concerns for production and profit." and "The safety of our employees and concerns for the environment are paramount in our decision making process." These statements represent both corporate policy and the performance expectations for the PTI senior officer. These performance expectations are now being translated into measurable performance criteria for PTI employees.

The PTI performance expectations and performance appraisal systems for individuals are currently undergoing revision. Management has directed that beginning in the next appraisal period, October 1, 1991, all performance expectations and appraisals will contain "measurable and observable ES&H performance expectations." Currently, only the Compliance Department and the ES&H Department have specific, observable, and measurable performance expectations.

Rockwell-INEL

Rockwell-INEL has generic ES&H statements in nearly all of its position descriptions and specific ES&H statements in about one-third of the position descriptions. The line management position descriptions tend to have more than one item involving ES&H, and they are both generic and specific. An example of a generic element from the Director of Production Operations is: "Responsible for overseeing that safety of the individual and the environment is understood...." On the other hand, his performance plan also has the specific requirement to "utilize DOE Order 5480.19 'Conduct of Operations' to define operating methodologies." Both performance criteria are difficult to measure. His position description has a total of five ES&H requirements. The

Manufacturing Manager's position description only has one general ES&H requirement: "Manage the Manufacturing Organization in a Manner that meets all DOE policies for Safety, Security, Quality, and Employment Practices." The operations technicians position descriptions were revised on June 13, 1991, to incorporate generic ES&H statements.

Rockwell-INEL has a combined performance rating form and performance plan with standardized categories including Safety. The form does not include Environment, but Rockwell-INEL plans to modify the form to include this element. Of the plans reviewed, all contained generic consideration of safety, but only about one-third considered Environment; 40% of the plans also had specific safety requirements. Most of the performance appraisal plans were updated in late 1990, and since they tend to be newer than the position descriptions, they generally contain more ES&H requirements than the position descriptions. The line management and operator position descriptions reflected Rockwell Management's desire to reduce accidents, implement Conduct of Operations, and implement the Facility Manager Concept. For example, a technician III in the Phase II Facility had the following specific performance objectives specified:

Participate in compliance driven changes.... Assist in bringing Phase II into compliance with DOE, OSHA.... Assist in implementation of Facility Manager concept.... No injuries or lost time accidents.

Most are broad, difficult to quantify performance measures.

Westinghouse Idaho Nuclear Company, Inc.

WINCO has a highly structured performance appraisal system that is derived from Westinghouse Inc. Performance Management System. WINCO has three separate systems; one for exempt workers, one for non-exempt workers, and one for the bargaining unit. The non-exempt workers have generic performance appraisals outlined on company forms, i.e., WINCO Form-5084 (Support Staff) and Form 5085 (Technical Support Staff). Each form has two ES&H items; Industrial Safety and Housekeeping, and Nuclear Related Safety. However, the performance elements are rote items related to personal safety and do not reflect a strong management interest in full ES&H culture. This also does not emphasize ES&H in the same manner as does the Total Quality program that Westinghouse has as a corporate objective.

The majority of exempt employee performance appraisals contained ES&H-related objectives. However, these objectives were basically related to personal safety or to achieving production goals. Again, this does not reflect a commitment to a corporate ES&H culture. WINCO had an opportunity to reiterate their corporate support of ES&H culture in their guidance on performance evaluations (i.e., in the September 26, 1990, and April 23, 1991, Guidance on the "1989-1990 Performance Evaluations," and the "1991 Employee Performance Appraisal System Objectives") but did not take it. Thus, WINCO missed a most effective method of communicating ES&H goals and performance expectations through the performance appraisal process.

Self-Assessment

ID and AAO-W self-assessments do not address this issue. The contractor self-assessments partially address this issue.

FINDING MF-21 Employee Concern Programs at Idaho National Engineering Laboratory

Employee concern programs at Idaho National Engineering Laboratory are not effective for achieving Environment, Safety, and Health objectives or for fostering a new Environment, Safety, and Health culture with the exception of Westinghouse Idaho Nuclear Company's program.

Discussion

ID Order 5483.1A "Occupational Safety and Health Program for DOE Contractor Employees at Government-Owned, Contractor-Operated Facilities" was issued in December 1983. It requires that ID and its contractors maintain a central file of employee ES&H concerns and their disposition, and that ID audit the INEL contractors' employee concern programs to assess their compliance with the Order.

Since the Secretary's directive that ES&H matters will take priority over production and program goals, employees have become more attentive to ES&H concerns and more willing to bring them to the attention of management. They will also expect to see their concerns dispositioned in a timely fashion. Consequently, it is more important than ever that the DOE field offices ensure that employee concern programs are established and operated in such a manner as to become effective tools for achieving the Department's ES&H objectives and for shaping a new ES&H culture.

Review of the employee concern programs at INEL has shown that, with the exception of the WINCO program, they are not effectively being utilized to achieve ES&H objectives or for nurturing the new ES&H culture as illustrated by the following:

- Although ID Order 5483.1A was issued 7 1/2 years ago, it was not until 2 1/2 years ago that an INEL contractor (PTI) instituted an employee ES&H concern program. The other five INEL contractors' programs are less than a year old. The Rockwell-INEL program was not formally instituted until as late as June 13, 1991. However, Rockwell-INEL did conduct a survey of all its employees in May 1990 to identify ES&H concerns. The survey resulted in identifying 204 concerns, and all but 35 have been closed out.
- Neither ID nor AAO-W has performed audits of their contractors' employee concern programs. As a result of the Management Subteam's preliminary observations, AAO-W now plans to perform an audit of the ANL-W employee concern program in the near future.
- ID is in the process of preparing a Supplemental Directive (draft ID Order 3750.B) to provide a common administrative methodology for resolution of various types of employee concerns. The draft requires that an ID employee, the Employee Concerns Coordinator, be designated as a single point-of-contact for ombudsman-like

concerns. However, the draft fails to recognize that ID has contractor audit responsibility under ID Order 5483.1A, which reasonably would be a responsibility of the Employee Concerns Coordinator.

- ID, AAO-W, and the six INEL contractors have taken actions, such as posting bulletin board notices and placing articles in company newsletters, to help ensure that the existence of and procedures for their employee concern programs are known to and understood by their employees. However, neither of the two field offices nor any of the INEL contractors, except WINCO, have a system to measure the effectiveness of their program. Such systems do exist elsewhere in the DOE, but no one interviewed at INEL was aware of their existence.

It is noted that Rockwell-INEL did conduct an Organizational Effectiveness Survey of its employees in August 1989. However, the survey failed to include any questions related to ES&H concerns.

- Very little has been done by either ID or AAO-W or their contractors to share "lessons learned" from the various employee concern programs. The only instance discovered during the Management Subteam assessment was the fact that in December 1990 WINCO did provide information on its program to ID and other INEL contractors for their possible use.
- Only two INEL contractors (WINCO and PTI) have an ES&H question on their employee exit interview form.
- Of the six INEL contractors, only WINCO has:
 - A staff member devoted full time to employee concerns;
 - A confidential data base to monitor personnel actions to help ensure no reprisals are made against employees who raise concerns; and
 - A program to disposition concerns raised in an employee exit interview.
- ID directed that a Safety Norm Survey be conducted by EG&G Idaho in January 1991 as an adjunct to the Employee Concern Program and as a part of the ID self-assessment. Approximately 4600 of the 12,000 employees at ID and at all the ID facilities were surveyed. The most positive areas of ES&H attitudes were identified as well as those most requiring improvement. The results were distributed to the participating organizations in May 1991. However, ID failed to provide the ID contractors with guidance regarding how the results should be used to improve the ES&H culture at INEL. Subsequent to the Management Subteam's inquiries regarding ID plans for use of the survey results, the ID Manager assigned lead responsibility for such plans to the OESHO and also provided some interim guidance to the ID contractors. The OESHO was directed to establish criteria for the continued use of the survey data and

for monitoring trends concerning the ES&H awareness and attitudes of the INEL personnel.

- A comparable type of safety norm survey was conducted in 1988 involving only EG&G Idaho employees. However, ID had no definitive plans to have a comparative analysis conducted to determine if any trends can be detected in the data and whether there are any statistically significant differences in the data sets. Again, subsequent to the Management Subteam's inquiries, ID tasked EG&G to conduct such an analysis.
- The May 1990 survey by Rockwell-INEL, the 1988 EG&G norm survey, and the 1991 Safety Norm survey provide useful snapshots in time regarding employees' ES&H concerns and attitudes. It would also be helpful to have sufficient data to perform trending analysis of those concerns and attitudes. However, with the exception of the earlier EG&G norm survey, such data are not available at INEL because, as observed earlier, most of the programs have been in place less than a year.
- As with previous Tiger Team assessments, a special telephone "Hot Line" was established to provide another avenue for employees and others to express ES&H concerns. More than 70 concerns were reported, and many were validated as being reasonable ES&H concerns by follow-ups conducted by the Tiger Team. All callers, except for a few former INEL employees, chose to remain anonymous for one reason or another; some expressed fear of retribution by their employer.

Self-Assessment

The Rockwell-INEL self-assessment recognized that their employee concern program does not always ensure that safety concerns are assessed promptly. (See Rockwell-INEL self-assessment Finding 4.2.21.15.) Otherwise, these deficiencies in the employee concern programs were not identified in the INEL self-assessments.

FINDING MF-22 Lack of Independence in EG&G Idaho Safety Review and Radiation Protection Programs

An independent safety review program and the independence and safety oversight aspects of a radiation protection program are pivotal parts of an effective Environment, Safety, and Health oversight function. At EG&G Idaho, these lack the necessary independence, which compromises their effectiveness and value.

Discussion

EG&G Idaho has developed a system of committees and line organization groups that form their contractor independent safety review and appraisal system. However, there is no management document that describes implementation requirements. The requirements of DOE Orders 5480.5, 5480.6, and 5482.1B Section 9.d are very specific and require that "internal appraisals shall be conducted at the operating level by persons not directly responsible for performance of the activities being appraised." In addition to independence, there are requirements for technical competence and a formal charter for

review committees that clearly defines requirements for structure, meetings, quorum, record keeping, and auditability of records. The EG&G Idaho system requires Department Managers to establish safety review committees or safety review groups reporting to them. However, because management requirements are not sufficiently specific, the implementation of the independent safety review function varies between Departments. In some cases, committees are operating out of compliance with DOE Orders. (See Section 4.5.1.17, Concerns FR.1-1 and FR.1-2.)

The function of the independent review system is to provide internal, multidisciplinary reviews with indepth technical competence and to provide for objective and independent reviews of ES&H functions. In some cases, Department Managers allow the chairpersons or the committee members to provide technical support on almost a daily basis or to be immediately available for consultation by phone or in person. (See Section 4.5.1.13, Concern FR.3-1.) The informality of operation has permitted committee records sometimes to be written after implementation of committee recommendations have been made or safety reviews to be performed without going through established channels and requirements. The review system in the Power Reactor Programs Department was found to be the least independent in their review ability. (See Section 4.5.1.13, Concern FR.3-2.)

The problem inherent to the EG&G Idaho review system is basically that it causes an internal conflict of interest. The Department Manager is responsible to make the safety review system work independently but is also responsible for production and program requirements, thus providing a continuing conflict. The EG&G system allows the Department Manager to "solve" safety problems by using the review staff as an inline support group in violation of DOE Orders.

A truly effective triennial appraisal of the safety review system should have detected these issues. However, the most recent triennial review team was not directed to perform an appraisal that met the requirements of DOE Order 5482.1B because EG&G Idaho had not interpreted the order to include contractors. Management did not instruct the team to review the safety review program covering its INEL site responsibilities. (See Section 4.5.1.13, Concern FR.5-1.) In any case, EG&G Idaho historically had not taken action on recommendations from previous triennial reviews until just prior to the next review. Both the 1988 and the 1991 triennial appraisal teams questioned the motives of EG&G management in this regard. (See Section 4.5.1.13, Concern FR.5-2.)

Aspects of the radiological protection program do not meet DOE Order 5480.11, DOE Order 5482.1B, ANSI N323, ASME NQA-1-1989, and DOE Order 5484.1. These DOE Orders define aspects of radiological protection programs not presently being met, including performance criteria, independent and safety oversight, and internal audits and assessments. In 1988, EG&G Idaho undertook a reorganization that reassigned the safety staff (e.g., Radiological Engineers and Health Physics Technicians) to the operating organizations and assigned overall safety program requirements, independent oversight, and the interpretation of rules and regulations to the Environmental Safety and Quality Department. This upgraded the line organizations' management and accountability for ES&H compliance. Unfortunately, line organizations were found to be "not effectively discharging its responsibility for compliance...." (See Section 4.5.1.14, Concern RP.1-1.) Again, the

interpretation of requirements by the line managers conflicts with their production responsibilities.

Other aspects of the program were found to be deficient in some manner including the radiological safety oversight program (see Section 4.5.1.14, Concerns RP.2-1 and RP.2-2), the site health physics service activities (see Section 4.5.1.14, Concerns RP.7-1, RP.7-2, and RP.7-3 et.al.), and the self-assessment. Overall, the EG&G Idaho organization appears to have illogically mixed traditional line management responsibilities with ES&H activities, which has resulted in important parts of the ES&H program breaking down.

Self-Assessment

These findings were not addressed in the EG&G Idaho self-assessment.

(See Section 4.5.1.1, Concerns OA.3-1 and OA.5-2; Section 4.5.1.13, Concerns FR.1-1, FR.1-2, FR.3-1, FR.3-2, FR.4-1, FR.5-1, FR.5-2 and FR.6-1 for independent safety review; and Section 4.5.1.14, Concerns RP.1-1, RP.1-2, RP.2-1, RP.2-2, RP.3-1, RP.5-1, RP.5-4, RP.7-1, RP.7-2, RP.7-3, RP.8-1, RP.9-1, RP.10-1, RP.12-1, RP.12-2, RP.12-3, RP.12-4, RP.12-5, RP.12-6 for the radiation protection program.)

FINDING MF-23 Building Manager System

The EG&G Idaho Building Manager system, an important component of EG&G Idaho Environment, Safety, and Health program implementation, evidences deficiencies in formality of operation, in understanding of responsibilities and authorities, and in training.

Discussion

EG&G has instituted a Building Manager system as an important component of its ES&H program implementation. As provided in the EG&G Resource Manual, the Building Manager, generally a group or unit manager, is appointed by the senior manager of the organization that occupies the majority of the space within a specific facility and its associated grounds. The Building Manager "owns" the assigned facility and has been given a lengthy and significant set of responsibilities, many of them in the ES&H area. For example, the Building Manager:

- Approves facility emergency preparedness plans.
- Approves all operations, maintenance work, and facility modifications before they begin.
- Ensures safety analyses, Safety Analysis Reports, and readiness reviews are developed or conducted.
- Ensures environmental monitoring and compliance programs are in place.
- Ensures lockout/tagout systems are in place.

The Building Manager assignment is in addition to all of the individual's other duties.

There are no written policies or procedures describing selection, tenure or removal, or the Building Managers' interfaces and authorities with respect to ES&H professionals, building tenants, fellow employees, visitors, and regulators. Although it is provided that Building Managers may obtain support services from other Building Managers, no mechanism is established to facilitate such activities. Also, there is no mechanism for them to regularly meet with each other to share and profit from lessons learned.

Interviews with a sampling of Building Managers revealed that many are not aware of the full range of their assigned responsibilities, and that most of

them do not consider that they have been adequately trained to perform these duties.

In light of such deficiencies, it is unrealistic for EG&G management to expect the Building Manager system to fulfill its assigned responsibilities.

Evidence was presented to the Management Subteam of the existence of facility "ownership" programs at ID and Rockwell.

- ID recently initiated a program of "facility representatives," designed to cover all INEL facilities. While its purpose is limited to occurrence reporting responsibilities under DOE Order 5000.43A, the program has the potential for expansion into other areas of ES&H program implementation. ID is actively considering such expansion.
- Rockwell has implemented a "facility manager" concept. This concept also evolved from the occurrence reporting requirement, but is in the process of expanding into wider areas of responsibilities.

Self-Assessment

The ID self-assessment addressed the facility representatives system in the context of occurrence reporting. None of the contractor self-assessments addressed this issue.

FINDING MF-24 CH Appraisal Process

The Department of Energy Field Office Chicago/Argonne Area Office annual institutional appraisal process is seriously deficient as a management tool to promote Environment, Safety, and Health performance.

Discussion

CH has long conducted annual institutional appraisals by which the contractor receives a "report card" on its performance in all programmatic, functional, and administrative areas, including ES&H. In the CH/AAO annual appraisal of ANL, comments on ANL-W are woven throughout the commentary, and there is no stand-alone rating for ANL-W; therefore, it is difficult to determine the evaluation of ANL-W. ANL-W receives, through this process, weak direction regarding DOE's assessment of past performance and expectations for the coming year. Therefore, the CH/AAO annual institutional appraisal of ANL-W is not effective in promoting ES&H performance.

For example:

- In the area of Emergency Preparedness, ANL moved from "unsatisfactory" in FY 1989 to only "marginal" in FY 1990, with no signs of improvement in FY 1991. Specific weaknesses called out in the FY 1990 institutional appraisal (e.g., defining roles and responsibilities, plans and procedures, facilities and equipment, training, protective actions, with the facility area needing the greatest attention) remain areas of concern as evidenced by current S&H findings. (See Section 4.5.2.5, Concern TC.1-1;

Section 4.5.2.8, Concern TS.2-3; Section 4.5.2.7, Concerns EP.1-1, EP.2-1, EP.3-1, EP.4-1, and EP.5-1.)

- Industrial Safety and Fire Protection were rated "marginal" and will probably remain so based on current TSA findings for ANL-W. In the current TSA Findings, seven items under Personnel Protection and eight items under Worker Safety were rated H₁/C₁; where H₁ = Potential to cause severe occupational injury, illness or fatality, or loss of facility, and C₁ = Noncompliance with DOE orders, policies or standards. (See Section 4.5.2.15, Concerns PP.2-1, PP.2-2, PP.2-3, PP.2-4, PP.3-2, PP.3-3, PP.4-1, PP.4-2; Section 4.5.2.16, Concerns WS.4-1, WS.4-2, WS.4-3, WS.4-4, WS.6-1.)
- ANL-W has unilaterally set unacceptably long completion dates to resolve findings from DOE's TSA of August 1988. This is inconsistent since many are considered by ANL-W to be high priority items. Likewise, ANL-W has responded poorly to a similar internal "audit" (90-10) dated June 1990 that was changed to an "appraisal" thereby obviating any need for the required responses. (See M&O Report item MF-16.)

Self-Assessment

Not covered by CH/AAO.

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6.0

**SELF-ASSESSMENT
DOE TIGER TEAM ASSESSMENT
IDAHO NATIONAL ENGINEERING LABORATORY**

**6.0 Evaluation of Self-Assessment Programs and Reports for DOE
Field Offices Idaho and Chicago and the Idaho National
Engineering Laboratory Contractors**

6.0 EVALUATION OF SELF-ASSESSMENT PROGRAMS AND REPORTS FOR DOE FIELD OFFICES IDAHO AND CHICAGO AND THE IDAHO NATIONAL ENGINEERING LABORATORY CONTRACTORS

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 environment, safety, and health (ES&H) concerns relating to their operations. On July 31, 1990, the Secretary issued detailed 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. To that end, the Secretary directed that each Tiger Team evaluate the effectiveness of the self-assessment programs of the sites being reviewed. This section presents the results of that evaluation at the Idaho National Engineering Laboratory (INEL).

6.2 TIGER TEAM METHODOLOGY

The Tiger Team evaluation of self-assessment activities at the INEL was complex since it included two DOE Field Offices, an Area Office and its branch, and six separate DOE contractors, all of whom are at different stages in the development of self-assessment programs and issuance of self-assessment reports. Recognizing this complexity, the Tiger Team Leader established a Task Force headed by the Deputy Tiger Team Leader and comprised of designated Tiger Team members. This Task Force structured the evaluation around the three major elements listed below:

- Adequacy of the self-assessment programs being implemented by each of the INEL organizations.
- Adequacy of the self-assessment reports prepared by each of the organizations.
- Comparison of the Tiger Team findings and concerns to the findings and concerns identified in the self-assessment efforts by the INEL organizations including the DOE Field Offices Idaho (ID) and Chicago (CH), and their respective contractors.

The criteria used to evaluate the self-assessment programs and reports were defined using the guidance contained in the July 31, 1990, memorandum from the Secretary of Energy. The Tiger Team findings and concerns were compared to an INEL list of all self-assessment findings and concerns, which was provided by the INEL organizations. The results of this comparison are shown in Section 6.5 and Attachment 1 of this report.

6.3 EVALUATION SUMMARY

The key self-assessment finding at INEL is as follows:

Although ID, CH, and each of the INEL contractors have initiated self-assessment efforts, the implementation process is incomplete, and the programs and reports do not meet all of the applicable criteria of the Secretary of Energy's guidance. The portions of

the self-assessment programs that are developed have not been fully institutionalized.

Support for this key finding is in Section 6.4, which includes all the individual findings organized by DOE Field Office and contractor. The individual findings are summarized in Table 6.1. Briefly, the underlying issues are the following:

- Although the Secretary first directed implementation of self-assessments in January 1990, with more specific guidance in July 1990, intensive efforts to develop self-assessment programs at INEL did not commence until the latter part of calendar year 1990. A large part of this delay can be attributed to the lack of timely and definitive guidance from the DOE-HQ Offices of Nuclear Energy (NE) and Energy Research (ER) and the two Field Offices, ID and CH. The result has been widely varying approaches and inconsistent self-assessment implementation among the Field Offices and the INEL contractors.
- None of the programs or reports fully meet the criteria of the Secretary's guidance. Management systems to support the self-assessment process, (e.g., tracking, root cause analysis, trend analysis, lessons learned, priority setting, corrective action, and closure of issues) have not matured and, in some cases, do not exist. Training programs for self-assessment and supporting management systems are often in their infancy. At various stages of development within INEL are the use of ES&H areas of inquiry, checklists tailored to a particular activity, 3-year schedules to ensure comprehensive coverage of all applicable ES&H facilities and disciplines, and corrective action plans with milestones and cost estimates. In some instances, independent validation of self-assessments is not ensured.

Even though the effort began late and was often uncoordinated, steady progress has been made. Without exception, the Task Force found a professional and receptive Field Office and contractor staff who are aware of the formative status of their self-assessment programs and are committed to put in place an institutionalized self-assessment program at INEL.

6.4 FINDINGS

6.4.1 DOE Field Office, Idaho

6.4.1.1 Overview

In April 1990, the Acting Manager of ID established a Management, Environmental, Safety and Health (MESH) Review Team composed of ID and contractor personnel to assess current INEL operations. The purpose of the MESH review was to evaluate INEL performance with respect to findings in previous Tiger Team reports for other DOE sites and the high priority issues in the Secretary of Energy's January 26, 1990, memorandum. The MESH report was issued May 11, 1990.

TABLE 6-1 SELF-ASSESSMENT FINDINGS

Finding SAF-1	Implementation of the ID self-assessment policy and program plan is incomplete. Considerable effort remains to develop the details required by the policy and program plan and to ensure that, in actual practice, the intent of the Secretary of Energy's guidance is met.
Finding SAF-2	The ID self-assessment report and the input used to develop the report do not fully comply with the intent of the Secretary of Energy's guidance.
Finding SAF-3	ID has not provided timely and definitive self-assessment guidance to their contractors.
Finding SAF-4	CH, AAO, and AAO-W are late in the development of a comprehensive, integrated self-assessment program and the procedures supporting the program.
Finding SAF-5	The CH self-assessment report presented to the Tiger Team does not meet the Secretary of Energy's criteria. A comprehensive self-assessment report, which is intended to meet the Secretary's guidelines, is not scheduled for issuance by the Field Office until September 1, 1991.
Finding SAF-6	CH has not provided timely and definitive self-assessment guidance to Argonne National Laboratory.
Finding SAF-7	The EG&G self-assessment program policies and procedures, while generally comprehensive, fail to completely address several elements necessary to meet the Secretary of Energy's performance criteria.
Finding SAF-8	While significant progress has been attained, EG&G's implementation of the self-assessment program needs continued emphasis in several areas to fully meet the Secretary of Energy's performance criteria for self-assessment reports and to institutionalize the program.
Finding SAF-9	WINCO's policy and procedure do not incorporate all of the essential components of a balanced self-assessment program. In addition, the directives fail to address several elements specified in the Secretary of Energy's performance criteria.
Finding SAF-10	WINCO's implementation of the self-assessment program directives is incomplete. Several program features are not fully developed or institutionalized, and they require continued emphasis to fully meet the Secretary of Energy's performance criteria for self-assessment reports and a sustaining program.
Finding SAF-11	The Rockwell self-assessment policy and procedures fail to fully address several program elements necessary to improve program effectiveness and to meet the Secretary of Energy's performance criteria.
Finding SAF-12	Rockwell's implementation of the self-assessment program requires continued emphasis to increase its effectiveness. Several elements do not yet meet the Secretary of Energy's performance criteria for self-assessment reports and a sustaining program.
Finding SAF-13	The procedures and implementation of the recent MK-FIC self-assessment program do not meet all of the performance criteria of the Secretary of Energy's memorandum. The program is still evolving and is not institutionalized.
Finding SAF-14	The MK-FIC baseline report does not reflect a thorough review and analysis of self-assessment findings to determine company-wide ES&H programmatic issues.
Finding SAF-15	PTI does not have a self-assessment program that complies with the performance criteria of the Secretary of Energy's memorandum. Their baseline report lacks the rigor and analysis expected in a thorough review and does not have a corrective action plan.
Finding SAF-16	ANL-W does not have a documented self-assessment program. While they have been actively involved with organizing and conducting a self-assessment since late 1990, there is no overall policy directive stating the scope of the program.
Finding SAF-17	The ANL-W self-assessment process does not meet all of the performance criteria in the Secretary of Energy's memorandum for reports and a sustaining program. The corrective action process does not ensure timely or verified closure of identified findings.

In September 1990, the ID Manager directed the ID staff to begin performing quarterly critical self-assessments, focusing on their responsibilities in the areas of environment, safety, and health. These quarterly self-assessments formed the basis for preparation of the ID self-assessment report of June 4, 1991.

In addition to these activities, in October 1990, the ID Manager appointed the Performance Review, Improvement, and Management Enhancement (PRIME) Team whose mission was to analyze "previous ID assessments and Tiger Team reports from other DOE Field Offices and provide actions and guidance in advancing ID's internal ES&H management posture." Included on the PRIME team was a Task Leader for self-assessments. The PRIME team provided initial training in the self-assessment process, evaluated the quality of the quarterly self-assessments, and contributed significantly to the issuance of the ID self-assessment program plan.

6.4.1.2 Findings

FINDING SAF-1

Implementation of the DOE Field Office, Idaho, self-assessment policy and program plan is incomplete. Considerable effort remains to develop the details required by the policy and program plan and to ensure that, in actual practice, the intent of the Secretary of Energy's guidance is met.

Discussion

The ID initial self-assessment policy and program plan were published in the ID policy manual on March 4, 1991. On June 20, 1991, ID issued a significant revision to both the policy and program plan, which now meet the essential criteria set forth in the Secretary's guidance on self-assessments. However, much remains to be done before the implementation of the program conforms to the Secretary's intent. For example:

- Procedures to implement the ID program have either not been established or fully implemented by the ID Principal Staff. Areas of inquiry and checklists tailored to specific disciplines, facilities, and responsibilities are still being developed. None of the Principal Staff have completed 3-year self-assessment schedules.
- The ID self-assessment program calls for the use of root cause and trend analysis, and development of lessons learned, but there are no procedures in place that describe the methodology to be used.
- The PRIME team provided initial training on the self-assessment process; however, no long-term formal training program has been established. Likewise, no formal training programs have been established for the following management systems that support the self-assessment process: tracking, trend analysis, root cause analysis, lessons learned, prioritization, corrective action plans, and closure of issues.
- Although ID is in the process of developing an integrated tracking system (Commitment Management System) that will track the self-

assessment findings and concerns identified by ID and its contractors, this system is not yet established. At present, ID is relying on tracking systems developed by the individual ID Principal Staff. In some cases, these individual systems do not exist or are not effective. An integrated tracking system is necessary to enable ID to perform global root cause and trend analyses, and develop realistic sitewide lessons learned. (Also see Findings MF-9 and MF-21.)

FINDING SAF-2

The DOE Field Office, Idaho, self-assessment report and the input used to develop the report do not fully comply with the intent of the Secretary of Energy's guidance.

Discussion

As required by the ID program plan, the ID ES&H self-assessment report of June 4, 1991, was developed as follows: Each ID principal staff member conducted a "vertical" self-assessment of his/her individual organizations. These individual assessments were then reviewed at the ID Assistant Manager level or equivalent. The resulting packages were submitted to an ID "Horizontal Self-Assessment Group." This group was chaired by a member of the ID Office of ES&H Oversight, with members chosen from each ID Assistant Manager's organization. This group performed a "cross-cut" of these self-assessments, made a selective validation of findings, determined the key root cause, prepared the integrated ID self-assessment report, and transmitted it to the ID Manager.

According to the ID program plan, the ID Manager will establish the frequency for conducting ID self-assessments. Until the process becomes fully institutionalized, however, the Tiger Team has been advised that the above approach will be performed quarterly.

Top management participation was evident in the input provided for the report. The findings exhibit candor. The approach is documented in the self-assessment program plan and, in concept, possesses many of the ingredients of a sound self-assessment process. However, as noted below, improvements are needed in the process and preparation of the self-assessment report.

- The individual assessments varied widely in approach. Often, areas of inquiry or checklists, if used, were not tailored to the specific activity being assessed. Root cause analysis was not always performed. Corrective action plans did not always contain milestones and seldom included cost estimates.
- The comparison of Tiger Team findings to those of the ID self-assessment (see Attachment 1) shows that a low percentage of the Tiger Team findings were addressed in the ID self-assessment. This is further indication that the ID self-assessment process has not achieved the rigor and discipline that is called for in the ID self-assessment program plan.

- The ID self-assessment did not incorporate any issues identified in the ID contractors' self-assessment reports, except as the issues might point to problems within ID. This omission of contractor issues was a conscious decision by ID to ensure a self-assessment of ID only. However, unless the contractor issues are integrated into the ID report or some other method is developed to consider all ID and contractor issues on a global basis, ID will not have the means to perform a root cause and trending analysis, and to apply lessons learned sitewide.
- Because members of the ID Horizontal Self-Assessment Group work for the same organizations that are being reviewed, there is the potential for a loss of independence if these members review and validate assessments from their "home" organizations. The Tiger Team was assured that this was not permitted; however, the ID program plan does not address this issue. A policy statement clearly prohibiting such reviews would erase the perception that an independent review may be compromised.

FINDING SAF-3

The DOE Field Office, Idaho, has not provided timely and definitive self-assessment guidance to their contractors.

Discussion

It was not until March of this year that ID transmitted the Secretary's memorandum to their contractors [EG&G Idaho, Inc., (EG&G); Westinghouse Idaho Nuclear Company, Inc. (WINCO); Rockwell-INEL; MK-Ferguson of Idaho Company (MK-FIC); and Protection Technology Idaho, Inc. (PTI)]. No further guidance was provided by ID. For that matter, guidance has not been furnished to ID by NE or by any PSO. (Also see Finding MF-2.) This lack of timely, definitive guidance has resulted in program implementation delays and widely varying and inconsistent approaches by the contractors in program development and report preparation. (Also see Finding MF-6.)

6.4.2 DOE Field Office Chicago, Argonne Area Office, and Argonne Area Office-West

6.4.2.1 Overview

CH's self-assessment program was not issued until July 16, 1991. Prior to issuance of the program, some of the CH organizations [including Argonne Area Office (AAO) and Argonne Area Office-West (AAO-W)] either performed self-assessments of their operations or relied on reviews performed by outside consultants. These assessments, together with the CH management's awareness of key ES&H issues confronting CH, formed the basis for the CH self-assessment report that was presented to the Tiger Team on June 17, 1991. However, this assessment is not considered by the Tiger Team to fully meet the intent of the Secretary's guidance of July 31, 1990. According to milestones published by CH, issuance of a comprehensive, integrated CH self-assessment is scheduled for September 1, 1991. (See Finding SAF-5.)

6.4.2.2 Findings

FINDING SAF-4

DOE Field Office, Chicago, Argonne Area Office, and Argonne Area Office-West are late in the development of a comprehensive, integrated self-assessment program and the procedures supporting the program.

Discussion

A major part of CH's efforts to develop a self-assessment program began with the April 19, 1991, appointment of a member of the CH staff to "design and implement a formal self-assessment program...." This program was not issued until July 16 and, therefore, has not been in place sufficiently long to assess its effectiveness. Neither AAO nor AAO-W has developed procedures implementing and tailoring this recently issued program to their particular operations.

Timely development and implementation of this program, coupled with the supporting procedures, are essential in ensuring a consistent, comprehensive, and institutionalized self-assessment process.

FINDING SAF-5

The DOE Field Office, Chicago, self-assessment report presented to the Tiger Team does not meet the Secretary of Energy's criteria. A comprehensive self-assessment report, which is intended to meet the Secretary's guidelines, is not scheduled for issuance by the Field Office until September 1, 1991.

Discussion

CH presented the Tiger Team with a nine-page self-assessment, dated June 17, 1991, which is a compilation of known key ES&H and management issues confronting CH management. The report was derived from several sources such as the self-assessments of CH's Area Offices and its ES&H Division, vulnerability assessments provided to the Secretary of Energy as required by the Federal Managers Financial Integrity Act, and previous Tiger Team Assessments at other CH sites.

The report is useful because it identified significant actions that demand prompt attention by CH management. It is not considered, however, to be a comprehensive ES&H self-assessment as intended by the Secretary's guidance. For example, supporting data for the CH report included a review of AAO by an outside consultant who concentrated primarily on management issues. Some emphasis was on ES&H matters but not to the degree intended by the Secretary's guidance. Other supporting data included a draft AAO self-assessment performed in June 1990 that also dealt mainly with management topics. Input from AAO-W came from a thorough self-assessment that was confined to AAO-W's responsibilities under various agreements between CH, ID, and DOE-HQ, rather than the guidance contained in the Secretary's memorandum. Finally, as further indication that the assessment was not comprehensive, Attachment 1 shows that a low percentage of Tiger Team findings was addressed in the CH self-assessment.

According to milestones established by CH, a comprehensive self-assessment of CH will not be completed until September 1, 1991. Since that report will be issued after the Tiger Team leaves the site, no evaluation can be made as to its adequacy and effectiveness.

FINDING SAF-6

The DOE Field Office, Chicago, has not provided timely and definitive self-assessment guidance to Argonne National Laboratory.

Discussion

Over the last few months, there have been several meetings among the staff of CH, AAO, and ANL on self-assessments. Except for a letter of August 27, 1990, from AAO transmitting the Secretary's guidance to ANL, however, no formal and definitive self-assessment guidance has been issued to ANL by CH or AAO. This lack of guidance has undoubtedly contributed to the Argonne National Laboratory-West (ANL-W) self-assessment program and report deficiencies noted in Findings SAF-16 and SAF-17.

It should also be noted that ER has been chairing a working group to establish their own self-assessment program, and a representative from CH has served as a member of that group. However, ER has provided no formal self-assessment guidance to CH.

6.4.3 EG&G Idaho, Inc.

6.4.3.1 Overview

The EG&G self-assessment program consists of the following elements: Management By Walking Around (MBWA) tours by managers in their areas of responsibility, self-assessment surveillances by managers in areas of their responsibility, and appraisals and audits conducted by independent Performance Oversight and Assessment/Environmental Programs personnel.

While not meeting all of the Secretary's criteria, EG&G's self-assessment program is thorough and mature. Starting in 1989, EG&G was proactive in program development and implementation, and the company has many of the components institutionalized. An extensive baseline self-assessment report and corrective action plan were submitted to the Tiger Team, but they were difficult for outside personnel to use and evaluate.

6.4.3.2 Findings

FINDING SAF-7

The EG&G Idaho self-assessment program policies and procedures, while generally comprehensive, fail to completely address several elements necessary to meet the Secretary of Energy's performance criteria.

Discussion

The policy and procedure directives meet most of the Secretary's self-assessment performance criteria. Program developments to correct some areas that are not in full compliance are in progress or have been scheduled. ID's

review of the program identified some deficiencies as well, but EG&G has not yet formulated a response. Examples of program elements that do not meet performance criteria include:

- Senior Manager involvement in the self-assessment process, from planning to analysis to corrective action, is not fully documented in the EG&G directives. General Manager memorandums are not sufficiently formal to meet this requirement.
- Not all of the ES&H areas of inquiry from the Secretary's guidance are specified for coverage in the directives. Several of the Management and Organization (M&O) and Environmental areas are not addressed for management surveillance requirements, and many of the inquiry areas are not specified for audits and appraisals. Specific areas of inquiry, tailored for the organization, are necessary to ensure consistent coverage of the ES&H topics.
- Procedures do not specifically address several other self-assessment program criteria, such as determination of appropriate milestones and cost estimates for corrective action plans, tracking system requirements necessary to support the self-assessment program, closure verification for management surveillance findings, and incorporation of previously deficient areas in appraisal and audit checklists. (Also see Concern OA.5-3.)

FINDING SAF-8

While significant progress has been attained, EG&G Idaho's implementation of the self-assessment program needs continued emphasis in several areas to fully meet the Secretary of Energy's performance criteria for self-assessment reports and to institutionalize the program.

Discussion

Significant progress has been made in implementing the EG&G self-assessment program. The baseline and regular monthly reports contain both an overall company perspective as well as individual department managers' perspectives on ES&H. The reports meet the Secretary's intent of a senior management overview and analysis of issues, root causes, trending, lessons learned, and corrective actions resulting from the complete self-assessment program. Department managers are graded on the percent of independent appraisals findings that are already identified in the self-assessment program. Quantitative results of such grading for some facilities are graphed and displayed for employee view.

However, there are several instances where the implementation of program elements do not fully meet the performance criteria and are not institutionalized. Examples of areas where continued implementation emphasis is necessary include:

- Line management self-assessment. The line management element of the self-assessment process, since it was the most recently implemented, is not institutionalized. Not all of the line managers have fully implemented the self-assessment surveillance process in their organizations. For instance, one group manager

did not have a functioning self-assessment surveillance process, although MBWA tours were conducted on a weekly basis. (Also see Concern OA.1-1.)

- Coverage of facilities. Some facilities, which have been categorized as low risk, are not regularly scheduled for Technical Safety Appraisal (TSA) assessments.
- Deficiency tracking system. The management system used to track and report the self-assessment status is extensive but not user friendly. The deficiency corrective tracking systems are still being upgraded. Tracking systems are not integrated and do not meet all of the criteria in the Secretary's guidance. Cost estimates are seldom provided for appropriate corrective actions. Not all findings are entered in the system used by EG&G to manage corrective actions, including some very high-level action items. A Tiger Team request for a listing of findings sorted by ES&H discipline categories was answered by a report that filled 53 binders. (Also see Concern OA.5-1.)
- Root cause analysis. Root cause determination was primarily performed for Category I and II findings (EG&G's categorization system has four levels, I-IV). Although it was stated that root causes are determined for recurring/multiple Category III and IV items, this requirement was substantiated only in the Power Reactor Programs' procedure. Furthermore, the practice was not consistently performed in the self-assessment baseline report.
- Prioritization. There is no consistent methodology to ensure that limited resources are properly allocated to the most important corrective actions or that the most important corrective actions within a category are worked on first. A formalized process for assigning corrective action priorities has not been developed and implemented. Consequently, for most departments, the only prioritization system for the corrective actions on the 4000-5000 findings is that informally established by the department heads, based on the category I-IV designation.
- Deficiency closure. Closure of open deficiencies is not consistently accomplished in a formal or timely manner. Several Category II deficiencies were not closed by the required due date. Baseline assessments by department managers indicated problems in timely deficiency correction. EG&G has identified the lack of formal closure on external appraisal findings (with the exception of the Power Reactor Programs) in a company-wide compliance issue.

6.4.4 Westinghouse Idaho Nuclear Company, Inc.

6.4.4.1 Overview

The primary elements of the WINCO self-assessment program are (1) line management team assessments of the WINCO organization and (2) independent audits/surveillances/appraisals/assessments conducted by the Quality Assurance Department, the Radiation and Safety Committee, and the Environmental Oversight Group.

While incorporating a strong independent appraisal function and active senior management participation, the WINCO program does not fully meet the Secretary's intent for line management self-assessment. Portions of the self-assessment program that incorporate previously existing elements, such as the Radiation and Safety Committee and Quality Assurance audits, are mature. The newer elements, such as the line management assessments and environmental oversight, are still formative. While the program is nearly a year old, current directives have revision and issue dates since April 1991, reflecting changes that have not been fully implemented or institutionalized.

6.4.4.2 Findings

FINDING SAF-9

Westinghouse Idaho Nuclear Company's policy and procedure do not incorporate all of the essential components of a balanced self-assessment program. In addition, the directives fail to address several elements specified in the Secretary of Energy's performance criteria.

Discussion

The self-assessment policy and procedure do not fully incorporate line management self-assessment of responsible areas and functions. Furthermore, many key independent ES&H activities described in other directives are not assimilated into the self-assessment program to validate the line management assessment process. The program does not fully articulate the senior management role for oversight, analysis, and correction of key issues identified from the line management and independent assessment processes. The policy and procedure do not contain either the requirement for or detailed methodology of implementation for several other elements of the self-assessment program included in the Secretary's performance criteria. Examples are detailed below:

- Some of the elements required in a self-assessment program, while actually practiced by WINCO, are not incorporated in their policy and procedure for the program. The company's self-assessment policy and procedure essentially incorporate only one aspect of self-assessment at WINCO, which is the line management direction of independent assessments for each ES&H inquiry area. Existing line management activities are not included, such as MBWA tours; the Management Overview Program surveillances; and Safety, Housekeeping, and Resource Conservation and Recovery Act (RCRA) inspections. Other independent assessment programs, while addressed in separate directives, are not contained in the self-assessment policy and procedure.
- Documentation for some independent assessment activities does not fully meet the criteria. A charter had not been developed for the Office of Environmental Oversight, which was recently established to supplement the WINCO independent oversight of safety and quality (WINCO issued the charter during the Tiger Team Assessment). The Radiation and Safety Committee membership is selected from production and staff departments. Procedures do not prevent a committee member from evaluating his/her own department, which would compromise independence. While the WINCO

determination that a "largely independent" oversight function may be adequate for compliance with other regulations, the Secretary's performance criteria for independence as "not directly responsible for performance of the activity being appraised" is not met.

- Except for root cause analysis, the WINCO self-assessment directives do not address the process for senior management participation. Corporate review of program status is not covered.
- Directives do not provide sufficient detail for the following program elements: tracking system requirements necessary to support the self-assessment program, implementation of ES&H performance indicators, development of trending and lessons learned, and expeditious closure of findings.

FINDING SAF-10

Westinghouse Idaho Nuclear Company's implementation of the self-assessment program directives is incomplete. Several program features are not fully developed or institutionalized, and they require continued emphasis to fully meet the Secretary of Energy's performance criteria for self-assessment reports and a sustaining program.

Discussion

Self-assessment baseline reports and corrective action plans were submitted to the Tiger Team for the M&O and Environmental areas. The reports were critical and methodical, and incorporated much of the intent of the Secretary's guidance on self-assessment. A baseline self-assessment was not prepared for the TSA area, but is in progress and scheduled for completion in November 1991.

The regular line management self-assessment and the independent environmental appraisal elements of the self-assessment program have not been fully implemented. Schedules for commencing these functions will not be prepared until September 1991. Other elements of the program not fully implemented or that require continued emphasis include:

- Conduct of self-assessments. The baseline self-assessments for the M&O and Environmental inquiry areas did not consist of a comprehensive walkthrough of the entire facility. Environmental team members did not receive thorough training prior to conducting the self-assessment. Outstanding findings from earlier internal and external assessments were not all included in the baseline reports.
- Timely development of corrective action plans. Corrective action plans have not been developed for the key findings of the self-assessment reports.
- Tracking of corrective actions for findings. The ES&H findings resulting from manager MBWA tours; Management Overview Program surveillances; and safety, housekeeping, and RCRA inspections are not tracked in the WINCO deficiency tracking system.

- Management systems. The management systems for corrective action determination and tracking are undergoing improvement, and some features are still formative, as illustrated by the following examples. While corrective actions for findings are tracked by the assigned completion date, a comparison to the identification date is not routinely performed. Thus, management may not be aware of extensions to the completion date and whether the items are closed out in an expeditious manner, consistent with the assigned priority. Although WINCO indicated that cost estimates are established for out-of-normal scope or significant corrective actions, none were indicated in the baseline self-assessment or tracking reports. The Issues Management System is under development and is not scheduled for completion until December 1991.
- Analysis. The management analysis and evaluation elements of the self-assessment program are still formative. There were no performance indicators, trends, or lessons learned analyses performed in the self-assessment reports. ES&H-related actions are not fully or consistently prioritized. A formal and structured prioritizing system has been established, but the system has not been consistently applied across the company.
- Corrective action closeout. A review of the WINCO list of findings from the self-assessment reports and tracking system indicated that lack of timely and effective correction action from both internal and external assessments is a chronic problem. (Also see Finding MF-16.)
- Senior management oversight. A formal management review of the self-assessment central database is scheduled to be performed every 6 months, but none have been performed to date. Effort for a review was initiated during the Tiger Team Assessment. Regular reports have not been issued to senior management on the overall self-assessment program status of implementation and actions.

6.4.5 Rockwell-INEL

6.4.5.1 Overview

The primary elements of the Rockwell self-assessment program on the Specific Manufacturing Capability (SMC) program are: management walkdowns by line managers in their areas of responsibility, independent ES&H assessments performed by the Compliance Assessment and Environmental Departments, and oversight by the Program Assessment Group.

While not meeting all of the Secretary's performance criteria, Rockwell's program is thorough in its design and execution. Overall, the system is still evolving and is not institutionalized. Intensive effort has occurred in 1991, and progress is significant in this short time. ID review comments on Rockwell's self-assessment program, promulgated on June 14, 1991, contained no significant items. A baseline self-assessment report and corrective action plan were prepared that incorporated results from the initial efforts in program implementation.

6.4.5.2 Findings

FINDING SAF-11

The Rockwell-INEL self-assessment policy and procedures fail to fully address several program elements necessary to improve program effectiveness and to meet the Secretary of Energy's performance criteria.

Discussion

The policy and procedure directives are thorough and meet the intent of most of the Secretary's self-assessment performance criteria. However, there are several elements of the program that need to be added or specified in more detail to assist Rockwell in moving beyond the initial implementation efforts toward improved program effectiveness and maturity. Examples include:

- The coverage of ES&H areas of inquiry for the M&O area is not specified in the procedures.
- Self-assessment training requirements concentrate on the management walkdown process and root cause analysis, but do not specify trend analysis and lessons learned. (Also see Finding MF-19.)
- Management walkdown procedures specify considerable advance preparation, but fail to require use of a formal checklist.
- Directives do not detail some of the management systems requirements necessary to support the self-assessment program. For instance: milestones for corrective actions are not required by procedure; risk assessments are not required for self-assessment findings; prioritization methodology has not been formalized; and performance indicators to monitor ES&H performance are not required by procedure.

FINDING SAF-12

Rockwell-INEL's implementation of the self-assessment program requires continued emphasis to increase its effectiveness. Several elements do not yet meet the Secretary of Energy's performance criteria for self-assessment reports and a sustaining program.

Discussion

The self-assessment baseline report met the general intent of the Secretary's guidance on self-assessment. Senior management was involved, the coverage was thorough, comments were candid, and a root cause analysis identified causal factors and key findings for management focus. Corrective actions were determined for the findings and are listed in the deficiency tracking system.

The self-assessment program is still evolving and is not institutionalized. The effort to date has concentrated on the walkdown process implementation and has not stressed management analysis of the findings, including trending, root cause assessment, and lessons learned; or corrective action tracking and

resolution. Examples of areas where continued implementation emphasis is necessary include:

- Managers' self-assessment. The management walkdown portion of the self-assessment program is not fully implemented. Some actual assessments have been deferred from the dates originally scheduled.
- Independent verification. Some Independent Safety Review Committee members are administratively assigned to groups that provide ES&H support, and these members may not be considered independent on appraisals covering organizations or topics that they previously assisted. (Also see Finding MF-1.)
- Management systems. The management systems do not facilitate analysis of findings and management of corrective actions. The self-assessment deficiency tracking system did not contain all of the findings identified in the baseline self-assessment report. Only the findings that existed prior to the baseline effort were entered, and new baseline findings were not entered pending system improvement. This item was corrected during the Tiger Team Assessment. The corrective action tracking system is not numerically cross-referenced to the self-assessment baseline report, hindering status review efforts. Corrective action milestones and cost estimates are not determined, although completion dates are assigned. Self-assessment program trending is not performed. Priorities are not assigned to corrective action findings. (Also see Finding MF-9.)
- Management oversight. Management oversight is not sufficient for corrective action efforts. Over 10% of the external and independent internal appraisal and audit findings have unsatisfactory or overdue responses or corrective actions. While over 370 self-assessment findings have been corrected in the past 3 months, nearly 900 new deficiencies have been added, for a total of about 1600 deficiencies. Corporate review of ES&H trends, root causes, and corrective action status is not conducted.

6.4.6 MK-Ferguson of Idaho Company

6.4.6.1 Overview

MK-FIC has a recently proceduralized self-assessment program. The policy and six implementing procedures were issued in late March, with the two remaining procedures issued in early June. The program consists of semi-annual management assessments, weekly management walkdowns, ES&H and QA audits and surveillances, limited root cause analysis, and a deficiency management system. The policy and procedure directives generally comply with the Secretary's guidance, with some exceptions as noted below.

MK-FIC's April 1991 baseline self-assessment report lacked substance and was not the result of a detailed analysis of findings. The deficiency tracking system is formative. The MK-FIC self-assessment process requires improvement to meet the guidance of the Secretary's memorandum.

6.4.6.2 Findings

FINDING SAF-13

The procedures and implementation of the recent MK-Ferguson of Idaho Company self-assessment program do not meet all of the performance criteria of the Secretary of Energy's memorandum. The program is still evolving and is not institutionalized.

Discussion

MK-FIC has recently issued its self-assessment program implementing directives. The program does not meet the Secretary's intent for corporate oversight, formal training for self-assessment personnel, development of trending and lessons learned, and management of corrective actions. (Also see Findings MF-9 and MF-19.)

MK-FIC's procedures do not address corporate oversight of its self-assessment program. Morrison Knudsen Corporation conducted an ES&H compliance assessment in May 1991, but this report indicates that the corporate reviewers were not familiar with the Secretary's performance criteria; therefore, it cannot be considered a validation of the self-assessment program. (Also see Finding MF-1.)

While some training has been conducted on the deficiency tracking system and root cause analysis, there is no formal training program established for self-assessment personnel. This lack of training may slow program implementation and reduce consistency among departments.

Trending of self-assessment deficiencies has not been routinely conducted. Lessons learned are not analyzed or promulgated. There is no comparison between line management self-assessment and ES&H appraisal deficiencies to help management evaluate the effectiveness of their self-assessment program.

No overall program exists to manage the correction of the approximately 1200 deficiencies currently identified. Corrective action plans do not contain cost estimates. Not all deficiencies are closed expeditiously. The deficiency tracking system is still evolving, and does not contain all self-assessment findings.

The MK-FIC program does not address all of the areas of inquiry from the Secretary's memorandum. Appraisal checklists are not required for the ES&H audits and surveillances.

FINDING SAF-14

The MK-Ferguson of Idaho Company baseline report does not reflect a thorough review and analysis of self-assessment findings to determine company-wide ES&H programmatic issues.

Discussion

The MK-FIC baseline self-assessment report was submitted to ID shortly after issuance of the first six self-assessment procedures. The report contains a summary description of 10 management issues, root causes, corrective action

plans, and status. The report lacked substance and was not the result of a detailed analysis of findings from independent appraisals and line management walkthroughs. Without a detailed analysis of the findings, there is no assurance that the stated management issues encompass all major company-wide ES&H programmatic concerns. The report lacks performance indicators, trending, prioritization, risk analysis, and cost estimates for corrective actions.

6.4.7 Protection Technology Idaho, Inc.

6.4.7.1 Overview

PTI does not have a self-assessment program that meets the intent of the Secretary's memorandum. When directed to develop a self-assessment program, PTI wrote a document describing how their existing programs contribute to self-assessment, and how a self-assessment tracking and reporting system would be developed. PTI submitted this self-assessment document to ID and received comments on their self-assessment program. ID's concerns were substantive, and they indicate the need for extensive revision to the PTI self-assessment program. PTI has deferred revision of their self-assessment program until after completion of the Tiger Team review.

The PTI baseline self-assessment report lacked substance. The report consisted of copies of the individual findings, but did not contain any evaluation or analysis to determine company-wide ES&H issues. Furthermore, PTI has not developed an overall corrective action plan for their findings.

6.4.7.2 Finding

FINDING SAF-15

Protection Technology Idaho does not have a self-assessment program that complies with the performance criteria of the Secretary of Energy's memorandum. Their baseline report lacks the rigor and analysis expected in a thorough review and does not have a corrective action plan.

Discussion

PTI was not provided proper guidance from ID for a self-assessment program until after the required deadline for program submittal. Subsequently, ID provided the Secretary's memorandum and detailed comments on PTI's self-assessment document, but PTI has deferred response until after the Tiger Team review.

As presented in their March 1, 1991, document, the PTI self-assessment program does not meet the Secretary's guidance for continuing line manager involvement, an effective tracking system, formal training for self-assessment personnel, development of trending analysis and lessons learned, or root cause analysis. There is no policy or implementing procedure(s) to effectively describe the scope of the self-assessment program. (Also see Findings MF-9 and MF-19.)

The PTI baseline self-assessment lacks the rigor and analysis expected of a comprehensive review. The findings reflect problems identified by line managers and deficiencies noted by ES&H and QA audits. In some cases, the findings are minor housekeeping items, while other findings are not specific.

Root causes are assigned to each finding, but there is no evaluation or analysis of the individual root causes to determine if significant company-wide deficiencies exist. Corrective action is not prioritized except for the four broad Tiger Team categories.

The PTI self-assessment tracking system is rudimentary and does not provide enough data for effective analysis of deficiencies or management of corrective action. Some findings from the baseline self-assessment are missing from the tracking system.

6.4.8 Argonne National Laboratory-West

6.4.8.1 Overview

ANL-W does not have a self-assessment program defined by program policies or procedures. It is ANL-W's intention to combine their initial self-assessment with the Tiger Team review to provide a baseline from which to continue program development. Senior management has not achieved timely development and implementation of a sustaining self-assessment program.

ANL-W performed an initial self-assessment in preparation for the Tiger Team review. The assessment process lacks effective corporate oversight, active management of corrective actions, a mature deficiency management system, and complete implementation by divisions. The baseline self-assessment report is extensive but does not consistently address root causes, corrective action, or cost.

6.4.8.2 Findings

FINDING SAF-16

Argonne National Laboratory-West does not have a documented self-assessment program. While they have been actively involved with organizing and conducting a self-assessment since late 1990, there is no overall policy directive stating the scope of the program.

Discussion

AAO directed ANL to submit a description of its institutionalized self-assessment process for approval by October 30, 1990. ANL's response dated October 26, 1990, stated that a comprehensive self-assessment program would be submitted by January 1, 1991. This program has not yet been submitted, and ANL-W is currently committed to September 1991 for program definition and November 1991 for program implementation. ANL has established an Assistant Laboratory Director for Environment, Safety and Health, and Quality Assurance (ESH/QA) Oversight and a Manager, Internal Appraisals; however, the implementing procedures for the Internal Appraisal Program were not issued for review until June 26, 1991.

ANL-W began an extensive self-assessment in December 1990, which included review of results of prior assessments, and generated a baseline report in April 1991. This process was effective for the initial self-assessment. However, a formal program, defined by a policy statement and implemented by lower-tiered procedures that assign specific duties and responsibilities, is

required to ensure that the self-assessment program is maintained and improved on a continuing basis. (Also see Concern OA.2-1.)

FINDING SAF-17

The Argonne National Laboratory-West self-assessment process does not meet all of the performance criteria in the Secretary of Energy's memorandum for reports and a sustaining program. The corrective action process does not ensure timely or verified closure of identified findings.

Discussion

ANL-W used a tiered approach (management committee, working group, assessment teams, and division specific assessments) to organize and conduct its initial self-assessment. This baseline self-assessment used horizontal discipline assessment teams to cover organization and administration, ES&H, and document preparation/logistics. However, the ANL-W self-assessment process lacks effective corporate oversight, a formal self-assessment training program, active management of corrective action, consistent root cause analysis, trending, and development of lessons learned. (Also see Findings MF-9, MF-16, MF-19, and Concerns TC.1-1, TS.1-2.)

ANL-W considers that the Safety and Environmental Committee of the University of Chicago Board of Governors "thoroughly reviewed" the ANL-W Self-Assessment in March 1991. However, this review has not been well documented and its effectiveness cannot be assessed. Likewise, the oversight role of the ANL ESH/QA Oversight Directorate, which serves as "a principal forum for identifying ESH/QA issues on a laboratory-wide basis," is not clearly defined.

ANL-W laboratory and site management are not actively managing the correction of findings from the initial self-assessment. The major findings have been assigned to responsible managers for correction, and the division managers are responsible for divisional findings, but there is no systematic approach used by senior management to monitor progress. Corrective action is not prioritized and closure is not verified.

ANL-W is developing a sophisticated Issues Management System (IMS) for tracking deficiencies. While the IMS has the potential to provide complete information to managers regarding the corrective action status of their findings, currently only monthly reports of milestones due are issued. A procedure governing the administration of the IMS has been in draft form for 4 months. Only environmental, sitewide, and "significant" divisional findings from the baseline self-assessment were initially input into the IMS. These findings were reviewed for risk assessment but corrective action plans have not been prioritized. Cost data are included only if additional resources are required.

Division management walkthrough inspections are not fully implemented. (Also see Concern OA.5-1.) Division systems for the correction of deficiencies are not all proceduralized or complete; deficiencies are not all trended or reported to senior management.

ANL-W's baseline self-assessment report is extensive, but it does not provide assurance that all performance criteria from the Secretary's guidance have been addressed. There is no methodology or procedure indicated for root cause

analysis. While the management corrective action plans list milestone completion dates, cost or resource estimates are not provided.

6.5 COMPARISON OF TIGER TEAM FINDINGS TO SELF-ASSESSMENT FINDINGS

Comparison of the Tiger Team findings and concerns with those identified in the INEL self-assessments was accomplished by matching the Tiger Team findings and concerns with a list of findings and concerns provided by the INEL organizations based on their self-assessment activities.

Attachment 1 reveals a wide variation in the number and percentages of findings and concerns identified, in whole or in part, by ID, CH, and the INEL contractors when compared to those found by the Tiger Team. The comparison points out a need for all organizations to increase the effectiveness of their self-assessment efforts.

Please note that the statistics for the Environmental and Management categories count each finding multiple times, once for each Field Office or contractor to which it applies. Statistics were not determined for the Self-Assessment Findings. Total actual Findings/Concerns:

Environmental	101
Safety & Health	619
Management	24
Self-Assessment	17
	<u>761</u>

ATTACHMENT 1

ID SELF-ASSESSMENT FINDINGS/CONCERNS COMPARISON WITH TIGER TEAM FINDINGS/CONCERNS

Tiger Team Subteam	*No. of Findings/Concerns	Not Addressed	Partially Addressed	Fully Addressed
Environmental	95	72 (76%)	21 (22%)	2 (2%)
Safety & Health	96	77 (80%)	9 (10%)	10 (10%)
Management	20	10 (50%)	10 (50%)	0 (0%)
TOTAL	211	159 (75%)	40 (19%)	12 (6%)

CH/AAO/AAO-W SELF-ASSESSMENT FINDINGS/CONCERNS COMPARISON WITH TIGER TEAM FINDINGS/CONCERNS

Tiger Team Subteam	*No. of Findings/Concerns	Not Addressed	Partially Addressed	Fully Addressed
Environmental	62	48 (78%)	12 (19%)	2 (3%)
Safety & Health	3	3 (100%)	0 (0%)	0 (0%)
Management	9	7 (78%)	2 (22%)	0 (0%)
TOTAL	74	58 (78%)	14 (19%)	2 (3%)

ATTACHMENT 1 (CONT)
EG&G SELF-ASSESSMENT FINDINGS/CONCERNS COMPARISON WITH TIGER TEAM
FINDINGS/CONCERNS

Tiger Team Subteam	*No. of Findings/Concerns	Not Addressed	Partially Addressed	Fully Addressed
Environmental	81	24 (30%)	44 (54%)	13 (16%)
Safety & Health	202	87 (43%)	55 (27%)	60 (30%)
Management	11	5 (45%)	5 (45%)	1 (10%)
TOTAL	294	116 (40%)	104 (35%)	74 (25%)

WINCO SELF-ASSESSMENT FINDINGS/CONCERNS COMPARISON WITH TIGER TEAM FINDINGS/CONCERNS

Tiger Team Subteam	*No. of Findings/Concerns	Not Addressed	Partially Addressed	Fully Addressed
Environmental	60	18 (30%)	28 (47%)	14 (23%)
Safety & Health	N/A	N/A	N/A	N/A
Management	7	3 (43%)	3 (43%)	1 (14%)
TOTAL	67	21 (31%)	31 (46%)	15 (23%)

ROCKWELL SELF-ASSESSMENT FINDINGS/CONCERNS COMPARISON WITH TIGER TEAM FINDINGS/CONCERNS

Tiger Team Subteam	*No. of Findings/Concerns	Not Addressed	Partially Addressed	Fully Addressed
Environmental	39	15 (38%)	8 (21%)	16 (41%)
Safety & Health	89	48 (54%)	14 (16%)	27 (30%)
Management	11	6 (55%)	3 (27%)	2 (18%)
TOTAL	139	69 (50%)	25 (18%)	45 (32%)

ATTACHMENT 1 (CONT)

MK-FIC SELF-ASSESSMENT FINDINGS/CONCERNS COMPARISON WITH TIGER TEAM FINDINGS/CONCERNS

Tiger Team Subteam	*No. of Findings/Concerns	Not Addressed	Partially Addressed	Fully Addressed
Environmental	14	7 (50%)	6 (43%)	1 (7%)
Safety & Health	57	31 (55%)	11 (19%)	15 (26%)
Management	11	6 (55%)	5 (45%)	0 (0%)
TOTAL	82	44 (53%)	22 (27%)	16 (20%)

PTI SELF-ASSESSMENT FINDINGS/CONCERNS COMPARISON WITH TIGER TEAM FINDINGS/CONCERNS

Tiger Team Subteam	*No. of Findings/Concerns	Not Addressed	Partially Addressed	Fully Addressed
Environmental	5	4 (80%)	0 (0%)	1 (20%)
Safety & Health	37	26 (70%)	5 (14%)	6 (16%)
Management	7	6 (86%)	1 (14%)	0 (0%)
TOTAL	49	36 (74%)	6 (12%)	7 (14%)

ANL-W SELF-ASSESSMENT FINDINGS/CONCERNS COMPARISON WITH TIGER TEAM FINDINGS/CONCERNS

Tiger Team Subteam	*No. of Findings/Concerns	Not Addressed	Partially Addressed	Fully Addressed
Environmental	59	26 (43%)	24 (42%)	9 (15%)
Safety & Health	135	49 (36%)	35 (26%)	51 (38%)
Management	9	5 (56%)	3 (33%)	1 (11%)
TOTAL	203	80 (39%)	62 (31%)	61 (30%)

ATTACHMENT 1 (CONT)**SUMMARY
INEL SELF-ASSESSMENT FINDINGS/CONCERNS COMPARISON WITH TIGER TEAM
FINDINGS/CONCERNS**

INEL Organization	*No. of Findings/Concerns	Not Addressed	Partially Addressed	Fully Addressed
ID	211	159 (75%)	40 (19%)	12 (6%)
CH/AAO/AAO-W	74	58 (78%)	14 (19%)	2 (3%)
EG&G	294	116 (40%)	104 (35%)	74 (25%)
WINCO	67	21 (31%)	31 (46%)	15 (23%)
Rockwell	139	69 (50%)	25 (18%)	45 (32%)
MK-FIC	82	44 (53%)	22 (27%)	16 (20%)
PTI	49	36 (74%)	6 (12%)	7 (14%)
ANL-W	203	80 (39%)	62 (31%)	61 (30%)
TOTAL	1119	583 (52%)	304 (27%)	232 (21%)

* The statistics for the Environmental and Management categories count each finding multiple times, once for each Field Office or contractor to which it applies. Statistics were not determined for the Self-Assessment findings.

7.0

ASSESSMENT SUMMARY BY ORGANIZATION

7.0 Assessment Summary by Organization

7.0

ASSESSMENT SUMMARY BY ORGANIZATION

The purpose of this section is to provide a summary of the ES&H assessment of the organizations responsible for work at the Idaho National Engineering Laboratory. This section is presented by Tiger Team discipline: Environmental, Safety and Health, Management and Organization, and Self-Assessment.

7.1 **DOE FIELD OFFICE, IDAHO**

7.1.1 Environmental

Management of the environmental program at the INEL is provided primarily through ID. In the past two years there have been significant improvements in ID permitting activities, including assuming responsibility for permit submissions involving ANL-W in July 1990. Additionally, there have been significant improvements in interactions and responsiveness with regulatory agencies.

ID has not provided adequate direction, coordination, and oversight to ensure compliance and to promote consistency among INEL contractors. The October 1990 reorganization of ID shows promise of eventually improving INEL performance, but at this time, neither the newly formed Technical Support Division (TSD) nor the Environmental and Quality Assurance Division (E&QAD) are functioning effectively. The TSD has been hampered by limited staffing and its reliance on line programs for budget. Coordination on permitting issues with sitewide implications has not been effective. The E&QAD field surveillance presence has been minimal with only one multidisciplinary appraisal being completed as of this assessment. E&QAD has had no role in review of QA plans.

7.1.2 Safety and Health

ID oversight and guidance of INEL contractors activities has been insufficient to assure implementation of operational safety initiatives. Standards for the development, conduct, or evaluation of INEL training are not developed. The EG&G Idaho radiological program is not effective and noncompliance with DOE Orders is pervasive. The QA program submitted by MK-FIC and the INEL Hazardous Materials Transportation Manual were not adequately reviewed by ID. Neither ID 5480.3 nor the ID draft INEL "Emergency Plan" is fully consistent with the DOE Orders.

Constraints against formal agreement between INEL contractors have been eliminated, yet initiatives to promote such agreements have not been taken. Problems were noted in many safety and health discipline areas (e.g., Medical Services, Industrial Hygiene, Training and Certification, Technical Support, Personnel Protection, Radiological Protection, etc.) deriving from the absence of formal agreements between EG&G Idaho and other INEL contractors.

RESL has not effectively established and implemented safety and health policy and procedures to ensure compliance with DOE Orders and operational safety. Forty-six of the 75 concerns identified by the S&H Subteam were attributed to deficiencies in policy, policy implementation, or procedures. The deficiencies existed in 12 of the 16 technical areas covered by the appraisal.

While RESL has recognized the need for a cultural change, more work needs to be done to fully implement it.

7.1.3 Management and Organization

In April 1990, ID commissioned a Management and ES&H review of INEL to identify ES&H concerns and deficiencies requiring corrective actions. Based on this review, ID undertook a number of policy and procedural improvements and reorganized to achieve independent oversight and to increase line management responsibility for ES&H activities. However, much effort is required to achieve ES&H excellence.

Since ID does not consider ES&H as a strategically important issue, planning processes do not integrate ES&H into its own overall mission and those of the INEL contractors. ES&H organizational roles, responsibilities, and authorities are unclear. Contractual documents do not reflect ES&H emphasis. Allocation of human resources is inadequate to ensure proper oversight; and individual ES&H expectations are not specifically defined and communicated. The directive system does not provide timely site-specific direction and guidance; management information and corrective action systems are fragmented and incomplete; and the CPAF process has not produced comprehensive and realistic evaluations. Oversight is not conducted with sufficient frequency, scope, or formality, particularly in the area of construction.

7.1.4 Self-Assessment

ID has issued a self-assessment program and report. Both represent solid efforts in establishing an ongoing self-assessment process. Considerable work remains, however, to develop the procedures required by the program plan to ensure that self-assessments follow the provisions of the plan.

ID did not transmit the Secretary of Energy's guidance of July 31, 1990, on self-assessments to its contractors until March 1991. No further guidance was provided at that time. This lack of timely, definitive guidance has contributed to inconsistent self-assessment approaches and progress by the ID contractors.

7.2 DOE FIELD OFFICE CHICAGO, ARGONNE AREA OFFICE, AND ARGONNE AREA OFFICE-WEST

7.2.1 Environmental

CH direction and oversight of environmental programs at ANL-W is provided through AAO-W; however, there has been no effective presence at ANL-W on environmental issues. There is currently no environmental expertise on the AAO-W staff, and there is only one position available, which was recently vacated, for an Operational and Environmental Safety Engineer. Matrix support is provided by the CH Environment, Safety and Health Division (ESHD), and their impact on ANL-W operations is minimal. ANL-W has been removed from the CH functional appraisal schedule in anticipation of the transfer of ANL-W to ID under SEN-6D. Coordinating with ID on permitting issues has not been effective. AAO-W has not enforced the submittal of the ANL-W QA Manual or the QA program for each of the five divisions, and by this lack of oversight, the development of the QA Manual and five QA programs has been given a low priority.

7.2.2 Safety and Health

The assessment indicated that CH, through the Argonne Area Office, continues to delegate the authority and responsibility for ANL-W to the contractor. Over the past year, CH and AAO have established a site presence with five employees on the DOE staff. This is a positive move toward greater DOE involvement in the decision process, but to date, this involvement has been from a line management and programmatic perspective with little visible impact on safety and health. There has been little direction, guidance, and oversight by CH and AAO as evidenced by the large number of concerns identified by the Assessment and the high level of noncompliance that have gone undetected. CH and AAO acceptance of the nonnuclear classification of the fuel processing facility provides further indication that oversight may not be focused on safety and health issues.

7.2.3 Management and Organization

With respect to ANL-W activities, ES&H organizational roles, responsibilities and authorities are unclear; and direction and guidance are not communicated in a timely manner. Management information and corrective action systems are in the formative stages. The Annual Institutional Appraisal process is not an effective management tool. Oversight is not conducted with sufficient frequency, scope, or formality.

7.2.4 Self-Assessment

CH presented the Tiger Team with a self-assessment report, dated June 17, 1991, which included input from AAO and AAO-W. This report was useful in that it identified significant actions that demand prompt attention by CH management, but the Tiger Team does not consider it to be a comprehensive, integrated self-assessment of the CH ES&H program, disciplines, and facilities. CH is scheduled to publish a comprehensive self-assessment report by September 1, 1991. CH's self-assessment program was not issued until July 16, 1991. It has not been in place sufficiently long to assess its effectiveness.

CH has not provided timely, definitive, self-assessment guidance to ANL which has undoubtedly contributed to the self-assessment deficiencies in the ANL-W program.

7.3 EG&G IDAHO, INC.

7.3.1 Environmental

Overall, environmental performance by EG&G Idaho is rated as adequate, and their program has a number of strengths. EG&G Idaho has undertaken a number of efforts to promote sitewide coordination among contractors, particularly through the Monthly Intercontractor Environmental Coordinator Discipline Meetings. To date, these meetings have focused mostly on Resource Conservation and Recovery Act issues. EG&G Idaho has also initiated the monitoring activity review process, which is an innovative effort to get independent review and input on various aspects of the INEL environmental monitoring program. They have established a strong drinking water program for the INEL and have taken steps to set up what should prove to be a very effective waste minimization and recycling program.

EG&G Idaho suffers from its decentralized structure and in many areas does not adequately integrate and coordinate environmental activities across its own organization. This is evidenced by the diversity in approach and effectiveness in the quality assurance area, the absence of a sitewide system for tracking and controlling toxic and chemical materials, and the lack of coordination regarding Spill Prevention Control and Countermeasures plans. The EG&G Idaho surface water program is weak in that the industrial wastewater streams are not well characterized or monitored, and these streams are managed primarily through discharge directly to a percolation pond or lagoon which conveys the wastewater into the ground rather than through treatment.

7.3.2 Safety and Health

Many safety improvements at EG&G Idaho facilities were in progress, but much work is still needed. Change is occurring, but the pace of change and the reactive nature of many actions form the basis for questioning the effectiveness of the change. EG&G Idaho management does not aggressively pursue excellence in safety and health. EG&G Idaho is composed of many semi-autonomous departments that do not receive definitive and consistent guidance in safety and health. The nature of the EG&G Idaho management structure permits Department Managers to formulate their individualized programs on safety, radiation protection, internal audits. As a result, there is significant variation between departments and a lack of central control. The deficiencies in both the self-assessment and independent safety oversight attest to the need for additional, more incisive, top-level management involvement.

7.3.3 Management and Organization

The EG&G Idaho planning process gives strategic importance to ES&H. Individual ES&H performance expectations are being communicated with specificity at the highest levels but not throughout the organization, and ES&H training programs are decentralized and have not been fully implemented. Employee concerns programs are not effective, and labor relations with OCAW require efforts to foster greater trust and confidence. Conduct of operations and quality assurance programs have not been fully implemented; and oversight lacks sufficient independence, particularly in the areas of permitting and NEPA documentation and safety and operations reviews of reactor programs. Oversight of construction activities lacks sufficient frequency and scope.

7.3.4 Self-Assessment

While not meeting all of the Secretary's criteria, the EG&G Idaho self-assessment program is thorough and mature. Starting in 1989, EG&G Idaho was proactive in program development and implementation, and the company has many of the components institutionalized. An extensive baseline self-assessment report and corrective action plan were submitted to the Tiger Team, but they were difficult for outside personnel to use and evaluate.

Areas where additional procedural and implementation emphasis is required include: the line management self-assessment process, documentation of the senior management role, coverage of the ES&H areas of inquiry, effectiveness of the tracking systems, prioritization and root cause analysis, and deficiency closure.

7.4 WESTINGHOUSE IDAHO NUCLEAR COMPANY, INC.

7.4.1 Environmental

WINCO's performance in the environmental area was found to be generally good, despite having some of the most difficult environmental problems to deal with at the INEL. WINCO is by far the largest source of radiological and non-radiological air emissions; they are the most significant source of groundwater contamination; and they store and process high level mixed waste. However, for the most part, WINCO has established strong programs to address these issues. WINCO has well developed programs in the toxic and chemical materials area for chemical inventory and for asbestos management. Their environmental quality assurance program is well structured and documented. The WINCO Emergency Planning and Community Right-to-Know program is well planned and an effective inventory of toxic chemicals has been established, although MK-FIC materials are not adequately integrated into the inventory at this time. WINCO's most significant weakness is the long delay in efforts to control nitrous oxide emissions from the plant.

7.4.2 Safety and Health

Not applicable. A TSA was not performed on WINCO.

7.4.3 Management and Organization

WINCO has a comprehensive long term strategic planning process that incorporates ES&H into its mission and the parent Westinghouse Corporation conducts related strategic planning for all of its DOE M&O contractors. WINCO has the only fully effective employee concerns program at the INEL site. Individual ES&H performance expectations focus primarily on personal safety rather than the full range of ES&H, and training programs are not fully implemented in that needs identification and curriculum development are incomplete. Conduct of operations requirements of DOE Orders have not been fully addressed, and there are no formal environmental surveillance programs to continually monitor permit and other compliance.

7.4.4 Self-Assessment

While incorporating a strong independent appraisal function and active senior management participation, the WINCO program does not fully meet the Secretary's intent for line management self-assessment. Portions of the self-assessment program that incorporate previously existing elements, such as the Radiation and Safety Committee and quality assurance audits, are mature. The newer elements, such as the line management assessments and environmental oversight, are still formative.

Some of the elements required in a self-assessment program, while actually practiced by WINCO, are not incorporated in their program directives. Other areas where additional procedural and implementation emphasis is required include: documentation of the senior management and corporate participation, management system requirements necessary to support the self-assessment program, analysis and evaluation of findings, and corrective action closeout.

7.5 **ROCKWELL-INEL**

7.5.1 **Environmental**

The environmental performance of Rockwell-INEL is rated as adequate and has been improving rapidly. ID must ensure that the current momentum is not lost when a change in M&O contractor occurs later this year. The Specific Manufacturing Capability (SMC) program is not a major source of air or wastewater effluents compared to other INEL operations. Many of the environmental compliance issues at SMC are a result of the classified nature of the SMC operations. That classification persisted until 1990 and led to serious deficiencies in the air program and to the accumulation of large quantities of uncharacterized, possibly hazardous or mixed waste. Rockwell-INEL has established a strong quality assurance program and a sound program for management and control of toxic and chemical materials.

7.5.2 **Safety and Health**

Rockwell-INEL has not effectively established and implemented safety and health policy and procedures to ensure compliance with DOE Orders and operational safety. Forty-six of the 89 concerns identified by the S&H Subteam were attributed to deficiencies in policy, policy implementation, or procedures. The deficiencies existed in 12 of the 17 technical areas covered by the appraisal. Rockwell-INEL does not have an effective safety and health oversight program. Appraisals and audits of some activities are either not being performed or are insufficient in scope.

7.5.3 **Management and Organization**

Rockwell-INEL does not have an ES&H strategic planning process; individual ES&H performance expectations are not specifically defined and communicated and do not emphasize environment. Training programs are conceptually sound but not fully implemented, and employee concerns programs are not effective.

DOE requirements for the conduct of operations have not been adequately implemented; and appraisal programs do not meet DOE requirements for a nuclear facility.

7.5.4 **Self-Assessment**

While not meeting all of the Secretary's performance criteria, the Rockwell-INEL program is thorough in its design and execution. Overall, the system is still evolving and is not institutionalized. Intensive effort has occurred in 1991, and progress is significant in this short time. ID review comments on the Rockwell-INEL self-assessment program contained no significant items. A baseline self-assessment report and corrective action plan were prepared that incorporated results from the initial efforts in program implementation.

Areas where additional procedural and implementation emphasis is required include: coverage of the ES&H areas of inquiry, self-assessment training, management system requirements necessary to support the self-assessment process, and management oversight.

7.6 MK-FERGUSON OF IDAHO COMPANY

7.6.1 Environment

While MK-FIC's operations have little potential for major environmental compliance problems, their current environmental program is deficient. MK-FIC has had little understanding of environmental issues; however, they have recently added a staff environmental engineer. Roles and responsibilities between MK-FIC and other M&O contractors have not been well defined for environmental responsibilities at construction sites within the fenceline of other contractors, and ID has done little to resolve this issue. As a result, MK-FIC has deficiencies related to management of Satellite Accumulation Areas, toxic and chemical materials control, and SARA Title III reporting. In addition, the MK-FIC quality assurance program is not strong enough to assure quality in environmental activities at their construction sites, particularly for MK-FIC activities at locations other than FPR.

7.6.2 Safety and Health

MK-FIC has not effectively established and implemented safety and health policy and procedures to ensure compliance with DOE Orders and OSHA-type requirements. In a number of areas, programs are not defined in MK-FIC documents or, where they are so defined, do not have effective implementing procedures in place. Areas where deficiencies were noted include quality assurance, emergency preparedness, packaging and transportation of hazardous materials, radiation protection, life safety code compliance, and construction safety.

MK-FIC does not have an effective program for supervising the safety performance of its subcontractors. Although deficiencies and noncompliances are being identified by appraisals and inspections, MK-FIC is ineffective in forcing correction of these deficiencies by the subcontractor. Many serious OSHA-type noncompliance/violations, including two Category I concerns, were observed by the S&H Subteam. Due to two Category I level concerns and numerous Category level II concerns MK-FIC voluntarily suspended construction activities at one construction site.

MK-FIC must put forth substantial efforts, especially in subcontractor oversight, to achieve the level of performance that is now expected of all contractors.

7.6.3 Management and Organization

MK-FIC planning is, by the nature of its construction management responsibilities, subordinate to other INEL planning processes. Individual ES&H performance expectations are not defined and communicated with specificity, and training programs do not give sufficient emphasis to environmental issues and fitness for duty. Employee concerns programs are not effective, and the appraisal program does not meet DOE requirements. Functional appraisals are not conducted, and the ES&H Plan does not give sufficient attention to environmental compliance.

7.6.4 Self-Assessment

MK-FIC has a recently issued self-assessment program that needs improvement in several areas: corporate oversight, formal training, trending, lessons learned, and management of corrective action for the approximately 1,200 deficiencies in the tracking system. The MK-FIC baseline report lacks substance and was not the result of a detailed analysis of findings from independent appraisals and line management walkthroughs. The report does not have performance indicators, trending, prioritization, risk analysis, and cost estimates for corrective action.

7.7 PROTECTION TECHNOLOGY IDAHO, INC.

7.7.1 Environment

PTI activities have little impact on the environment, and their small staff appears adequate. This assessment identified few PTI environmental findings.

7.7.2 Safety and Health

PTI has not effectively established and implemented safety and health policy and procedures to ensure compliance with DOE Orders. Instances of either a lack of policy or a flawed policy were identified in the areas of organization and administration, quality verification, operations, auxiliary systems, packaging and transportation, personnel protection, worker safety (OSHA-type compliance), and fire protection. In the few areas where policy exists, the implementation programs and procedures are not in place or are ineffective. Training is insufficient for some safety-related functions. PTI appraisals and audits are not effective in identifying safety program deficiencies and OSHA-type noncompliance. More work needs to be done to fully implement the safety and health program.

7.7.3 Management and Organization

PTI planning is, by the nature of its site security responsibilities, subordinate to other INEL planning processes. Individual performance expectations, which have historically focused on firearms and aviation safety, have begun to emphasize additional ES&H areas. A strong, aggressive training program is being enhanced by the addition of the full range of ES&H areas. Employee concerns programs are not effective, and appraisals of PTI activities do not meet DOE requirements.

7.7.4 Self-assessment

PTI does not have an effective self-assessment program. When directed by ID, PTI wrote a document stating how their existing programs contribute to self-assessment, and committed to development of a tracking system. ID provided substantive comments on this document, but PTI deferred revision of their program until after the Tiger Team review. The program does not have continuing line manager involvement, an effective tracking system, formal training, trending, lessons learned, or root cause analysis. The PTI baseline report lacked substance; it consisted of copies of the findings, without evaluation for significant company-wide issues.

7.8 ARGONNE NATIONAL LABORATORY-WEST

7.8.1 Environment

The ANL-W environmental program is in need of much improvement. Their deficiencies are partially caused by inadequate CH direction and oversight, and an organization where the Environment and Waste Management group reports to the ANL-W Site Manager, while the major research divisions report to the Associate Laboratory Director for Engineering Research. The environmental technical support and oversight functions are too far removed organizationally from line program management, and are not visible enough, to be effective. The ANL-W groundwater and environmental restoration programs are not well developed, staffing is inadequate, little activity has been undertaken, and there is insufficient coordination with the broader INEL programs. Other than for radiologically contaminated waste water streams, ANL-W liquid discharges are simply sent to unlined ditches and disposed into the ground without segregation or treatment.

7.8.2 Safety and Health

ANL-W management has not shown a strong commitment to support the new DOE safety culture and proactively foster a move towards safety excellence. This lack of commitment is manifested in the many concerns identified by the assessment related to noncompliance with DOE mandatory requirements and the failure to identify problems. ANL-W is viewed as taking the position of doing enough to get by, rather than driven towards safety excellence. This is evidenced by the "use-as-is" dispositions for nonconformances instead of taking the necessary steps to correct deficiencies, and the nonnuclear classification of the fuel processing facility despite the handling of large quantities of enriched nuclear material. ANL-W management has not aggressively approached establishing sitewide standards of practice for safety, for example; lockout/tagout; work control; criticality safety policy, procedures, and quality control; quality verification; and personnel protection and industrial hygiene programs.

7.8.3 Management and Organization

ANL-W planning flows from the ANL Institutional Plan which does not place strategic importance on ES&H concerns. Training programs are decentralized, fragmented and generally informal; individual ES&H performance expectations are not generally objective and measurable; and employee concerns programs are not effective. Conduct of operations and quality assurance programs, and corrective action systems have not been fully implemented. ES&H and quality assurance appraisal programs have not been implemented, and environmental and waste management surveillances are not being conducted. New experiments at EBR-II are not receiving environmental reviews.

7.8.4 Self-Assessment

Senior ANL-W management has not achieved timely development and implementation of a sustained self-assessment program; there are no program policies or procedures. ANL-W performed an extensive baseline self-assessment, but their process needs improvement in several areas: effective corporate oversight, active management of corrective action, an effective tracking system, and uniform/consistent implementation within all divisions. The baseline report

does not indicate the methodology used for root cause analysis, and it does not contain cost or resource estimates for corrective action plans.

APPENDIX A

**TIGER TEAM ASSESSMENT
PERSONNEL AND BIOGRAPHICAL SKETCHES
IDAHO NATIONAL ENGINEERING LABORATORY**

Appendix A — Assessment Team Personnel and Biographical Sketches

APPENDIX A-1

BIOGRAPHICAL SKETCHES of TIGER TEAM ASSESSMENT TEAM LEADER and TEAM LEADER STAFF IDAHO NATIONAL ENGINEERING LABORATORY

INEL TIGER TEAM ORGANIZATION

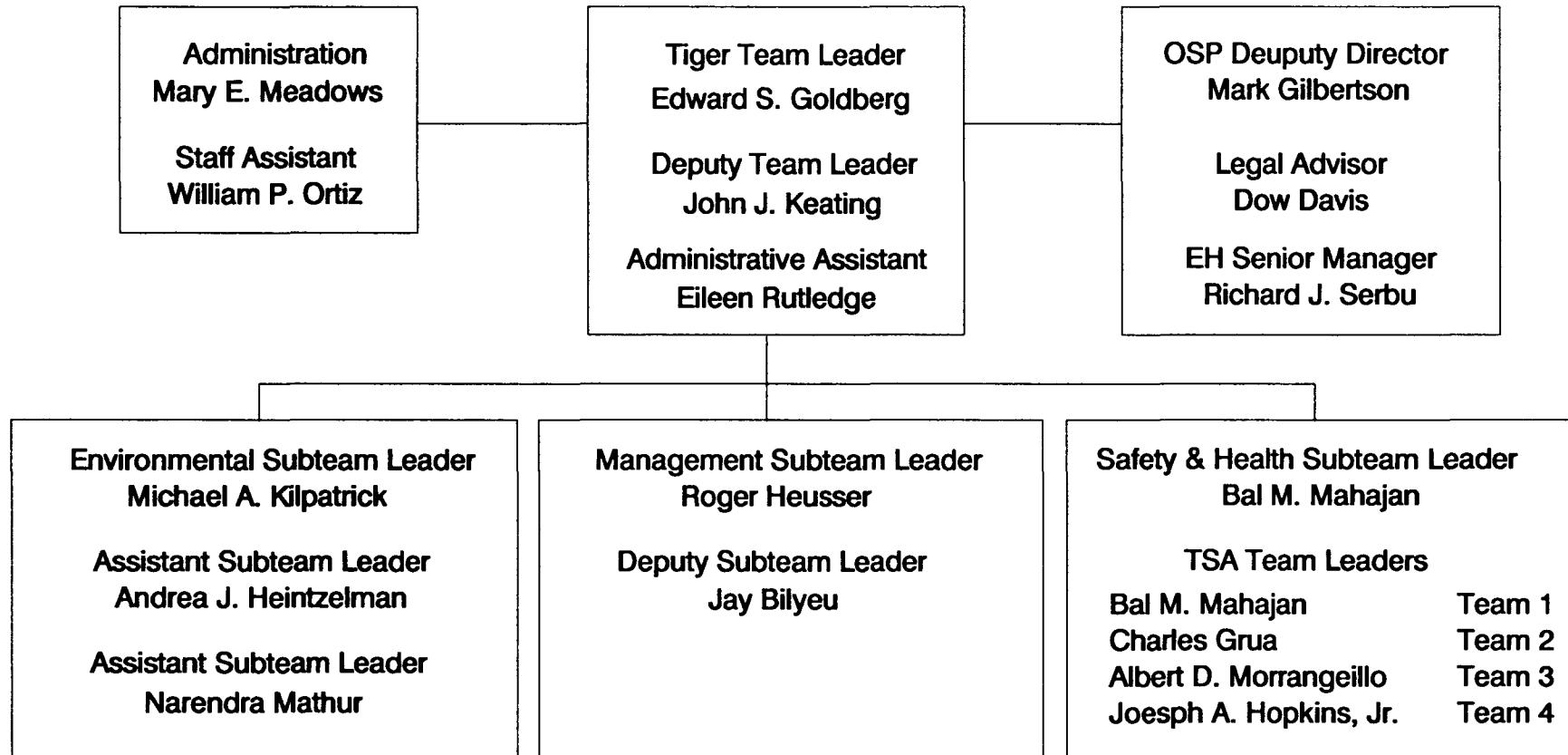


Figure A-1

NAME: Edward S. Goldberg

AREA OF RESP: INEL Tiger Team Leader

ASSOCIATION: U.S. Department of Energy
Richland Operations Office

EXPERIENCE: 36 years

- USAEC, ERDA, DOE
 - Deputy Manager for Site Resources, RL
 - Deputy Manager, RL
 - Assistant Manager for Operations, SR
 - Acting Assistant Manager for Projects, SR
 - Director, Waste Management Division, SR
 - Chief, Waste Management Branch, SR
 - Chief, Planning Branch, SR
 - Chemical Engineer, SR
- E.I. DuPont de Nemours & Co., Savannah River Plant
 - Shift Supervisor - PU-238 Production Facility
 - Shift Supervisor - Savannah River Laboratory, Pu-238 Project
 - Shift Supervisor - Separations Department, Pu-239 Production Facility

EDUCATION: B.E. Chemical Engineering, The Johns Hopkins University, 1955

OTHER: Meritorious Rank Award - 1990
Special Achievement Award - 1989
Special Achievement Award - 1983
Special Achievement Award - 1982

NAME: John J. (Jack) Keating

AREA OF RESP: Deputy Tiger Team Leader

ASSOCIATION: U.S. Department of Energy,
Richland Operations Office

EXPERIENCE: 26 years

- U.S. Department of Energy, Richland
 - Assistant Manager for Technical Support, RL
 - Assistant Manager for Safety, Security and Quality Assurance, RL
 - Assistant Manager for Safety, Environment and Security, RL
 - Director, Basalt Waste Isolation Division, RL
 - Deputy Assistant Manager for Operations, RL
 - Director, Breeder Technology Division, RL
 - Director, Fuels and Supply Division, RL
 - Assistant Director, Engineering Technology and Fuels, Fast Flux Test Facility Project Office
 - Reactor Engineer, Reactor Development and Technology Division, DOE-HQ
 - Reactor Engineer, U.S. Atomic Energy Commission, Idaho Operations Office
 - Officer in U.S. Army Ordnance Corps

EDUCATION: B.S. Engineering Physics, South Dakota State University, 1960
M.S. Nuclear Engineering, Iowa State University, 1966
Ph.D. Nuclear Engineering, Iowa State University, 1968

NAME: Mary Meadows

AREA OF RESP: Tiger Team Administrator

ASSOCIATION: Office of Safety Appraisals, Headquarters, Department of Energy

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 of 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, SSDC, and American Management Association

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

NAME: William P. Ortiz

AREA OF RESP: Staff Assistant

ASSOCIATION: USDOE, Continuous Electron Beam Accelerator Facility (CEBAF)
Newport News, Virginia

EXPERIENCE: 4 years

- Research Assistant, NMSU, Mechanical Engineering Department
- Construction Materials Technician Northern Engineering and Testing, Casper, Wyoming
 - Conducted and reported results of material analysis and quality control tests.
- Engineer, DOE-CEBAF
 - Conducted assessment of M&O contractor's compliance with DOE, Federal and State policy and ES&H regulations. Evaluated contractor progress on technical milestones.

EDUCATION: B.S. Mechanical Engineering, New Mexico State University

NAME: Eileen Rutledge

AREA OF RESP: Administrative Assistant to Tiger Team Leader

ASSOCIATION: U.S. Department of Energy,
Richland Operations Office

EXPERIENCE: 31 years

- U.S. Atomic Energy Commission, Idaho Operations Office
- U.S. Navy, CINCPAC, Pearl Harbor, Hawaii
- U.S. Department of Energy, Richland Operations Office
- Details to DP-1, DOE-HQ

EDUCATION: Numerous work-related courses and workshops

OTHER: Blue Mountain Federal Executive Association Employee of the Year - 1984
USDOE Exceptional Service Award - 1988
Office of Technology Advisory Committee Columbia Basin College
Numerous Federal Government awards for superior performance

APPENDIX A-2

BIOGRAPHICAL SKETCHES of ENVIRONMENTAL SUBTEAM MEMBERS TIGER TEAM ASSESSMENT IDAHO NATIONAL ENGINEERING LABORATORY

NAME: Michael A. Kilpatrick

AREA OF RESP: Environmental Subteam Leader

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

EXPERIENCE: 15 years

- U.S. Department of Energy, Washington, DC
 - Director, Office of Environmental Audit. Responsible for managing environmental audits and environmental components of Tiger Team Assessments; developed and presented Tiger Team Training Program, served as Assistant to Tiger Team Leader at Brookhaven National Laboratory and Environmental Team leader for Tiger Team Assessment at Princeton Plasma Physics Laboratory.
- Maryland Department of Environment, Baltimore, MD
 - Administrator of Superfund and Underground Storage Tank Program. Responsible for planning and implementing regulatory, enforcement, and cleanup programs.
- U.S. Environmental Protection Agency, Washington, DC
 - Chief, Compliance Branch, Office of Waste Programs Enforcement. Responsible for national implementation of enforcement programs under Resource Conservation and Recovery Act and Comprehensive Environmental Response, Compensation, and Liability Act.
- Naval Ship Research and Development Center, Annapolis, MD
 - Chemical Engineer. Responsible for developing wastewater treatment systems and other pollution control systems for Navy ships.

EDUCATION: Graduate Studies, Chemical/Energy Engineering
University of Maryland
B.S., Chemical Engineering, University of Maryland

NAME: Narendra N. Mathur

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 Environmental Subteam Leader for the Argonne Illinois Site and Lawrence Berkeley Laboratory Tiger Teams
- Department of the Air Force
 - Team Leader, Environmental Compliance Assessment and Management Program (ECAMP). Conducted Environmental Audits at the Houston and Columbia Air National Guard (ANG) Bases. Responsibilities included validating and prioritizing survey findings and briefing site commanders.
 - Program Manager responsible for ANG Hazardous Waste Management Program. Developed ANG policies, regulations, and implementation guidance.
 - Staff Engineer responsible for ANG Air Pollution Control Program.
- Department of the Navy
 - Environmental Engineer responsible for managing Drinking Water program for Chesapeake Division, Naval Facilities Engineering Command.
- District of Columbia Government
 - Worked as Environmental Engineer and later as Chief, Bureau of Air and Water Quality, Department of Environmental Services.

EDUCATION:

M.E., Environmental Engineering, Howard University, Washington, DC

B.E., Civil Engineering, Madhav Engineering College, Gwailor, India

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, Washington, DC
 - 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, and Hanford Site. Assistant Program Manager for Prioritization of Environmental Survey findings for DOE-wide, major defense and nondefense production facilities.
- U.S. Federal Energy Regulatory Commission, Washington, DC
 - 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, Washington, DC
 - 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, MA).
- James F. MacLaren, Ltd., Toronto, Ontario
 - Project Coordinator and Site Resources Manager assessing environmental impacts (flora, fauna, fisheries, geology, surface water, 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: Richard Bowen

AREA OF RESP: Group Coordinator

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 8 years

- Managed a feasibility study to evaluate and select a remediation technology to be used in cleaning up soil and groundwater contaminated with fuel oil and lube oil.
- Led a program to develop, test, and evaluate treatment technologies for wastewaters generated during the manufacture of ball powder. The initial work addressed fundamental chemical and biological mechanisms affecting treatment. These mechanisms were subsequently used to design and operate a pilot facility at Badger Army Ammunition Plant.
- Assisted in the development of an environmental plan for the cleanup and closing of a major explosive manufacturing facility that produced TNT, NG, NC, and ammonium perchlorate. An additional objective was to plan to demilitarization of a stockpile of obsolete conventional munitions.
- Evaluated the current wastewater treatment practices for a major brewer and reviewed their proposed anaerobic treatment system. Interviewed State regulators as to how the new treatment systems would affect the brewer's ability to meet National Pollution Discharge Elimination System requirements.

EDUCATION: Graduate Work, Molecular Biology, University of Maryland
B.S., Chemical Engineering, University of Virginia

NAME: Raeann Reid

AREA OF RESP: Deputy Group Coordinator

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 20 years

- Participated in Tiger Team Assessment of the Energy Technology Engineering Center.
- Participated in and led environmental audits, including multidisciplinary audits, while working at a major petrochemical company. The facilities audited included toll manufacturers, bulk terminals, repackaging plants, recyclers, and commercial disposal facilities. Led audits and risk assessments for several Arthur D. Little clients, primarily in the refining and petrochemical industries.
- Hazardous waste management, including 6 years for a major petrochemical manufacturer with responsibilities for Resource Conservation and Recovery Act (RCRA) training, offsite disposal arrangements, RCRA permitting, and implementation of internal solid and hazardous waste management procedures, groundwater assessments, and RCRA compliance assurance.
- 20 years' industrial and commercial laboratory management, environmental operations, environmental regulatory affairs, industrial and commercial hazardous waste management, including site evaluation and remediation and offsite disposal.

EDUCATION: B.S., Mathematics (Chemistry minor), Texas Technological University

NAME: David J. Allard

AREA OF RESP: Radiation

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 14 years

- Senior Consultant for Arthur D. Little, Inc. 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 Tiger Team Assessment of Morgantown Energy Technology Center.
- Vice President of TGM Detectors, Inc. with responsibilities for radiation protection and gas-filled detector design, engineering, and marketing.
- Supervisor of Health Physics for Nuclear Metals, Inc. with responsibilities in the area of environmental monitoring, external dosimetry, internal dosimetry, shielding, safety equipment engineering, radiation surveys, waste disposal, and regulatory affairs regarding their various uranium and thorium manufacturing operations.
- Medical/Health Physicist for Albany Medical Center with responsibilities involving laboratory radiation protection, QA, 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, SUNY at Albany

A.A.S., Environmental Health Technology, Hudson Valley Community College

OTHER: American Board of Health Physics (Comprehensive)
National Registry of Radiation Protection Technologists
New York State Department of Health-Radiation Equipment Safety Officer

NAME: Rosemary Goydan Benson

AREA OF RESP: Toxic and Chemical Materials

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 9 years

- Managed five-year study for the U.S. EPA Office of Toxic Substances (OTS) to develop procedures to assess protective equipment requirements for new chemicals. The procedures are used by OTS in their review of potential occupational exposures and environmental releases for new and existing chemicals under the Toxic Substances Control Act (TSCA), and, specifically, the Premanufacture Notification review process.
- Developed computer model for estimating chemical migration from polymer-based consumer products with an emphasis on releases to air and waste. The estimation procedures and computer model are published as Volume 11 of the *EPA Methods for Assessing Exposure to Chemical Substances* series and are used to assess potential environmental releases of chemicals under TSCA.
- Participated in multiyear study to generate pesticides permeation test data and develop a comprehensive protective clothing guidance manual for the EPA Office of Pesticides Programs to guide decisions on pesticides labeling regulations, registration requirements, farm worker safety programs, and training information development.
- Member of the Radiation Safety Committee at Arthur D. Little, Inc. that establishes corporate policies and procedures regarding radioactive material use at Arthur D. Little facilities.

EDUCATION: B.S., Chemical Engineering, Tufts University

NAME: Michael J. Bryant

AREA OF RESP: Surface Water

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 12 years

- Mechanical Engineer working on environmental audit of surface/drinking water.
- Mechanical Engineer responsible for design of post-treatment sewage outfall system, saltwater intake for desalination facility, and mobile Ice Runway sanitary facility at McMurdo Research Station, Antarctica.
- Biologist responsible for system design of biological and mechanical filtration, lighting spectrum, and heating/aeration, as well as environmental monitoring of closed tropical saltwater vertebrate breeding aquariums.

EDUCATION: M.S., Mechanical Engineering, University of Lowell
B.S., Biology, Northeastern University

NAME: L. Vivian Chavez

AREA OF RESP: Environmental Subteam Administrative Support

ASSOCIATION: Advanced Sciences, Inc.

EXPERIENCE: 12 years

- Advanced Sciences, Inc.
 - Senior Project Control Manager for the Systems and Technologies Division. Responsible for financial reports for all contracts within the division. Financial management and analysis of the division budget. Supervise and manage administrative staff.
 - Secretary/wordprocessor for the Publications Division. Prepared contract deliverable reports, proposals, statement of qualifications, letters, and memos, also provided graphics support.
- Tierra del Sol Engineering, Inc.
 - Secretary/Office Manager. Handled all bookkeeping (accounts payable and receivable, payroll, quarterly taxes, etc.); typed mylar drawings, and letters, memos; handled all other administrative duties.
- Sandia National Laboratories
 - Student Intern. Provided clerical support to the Computing Division.

EDUCATION: A.A. (in progress), Business Administration, University of Phoenix

NAME: Thomas L. Collins

AREA OF RESP: Waste Management

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 40 years

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: Tom England

AREA OF RESP: National Environmental Policy Act

ASSOCIATION: Analytical Services, Inc.

EXPERIENCE: 5 years

- Analytical Services, Inc.
 - Environmental and Computer Scientist. Responsibilities include performing technical reviews of NEPA documents covering DOE facilities, development, and enhancement of DOE NEPA document tracking systems, environmental guidance materials, and environmental legislation reauthorization analysis.
- Energetics, Inc.
 - Technical Specialist. Provided analysis of environmental laws and regulations, and their potential effects on DOE facilities; conducted technical reviews of NEPA documents; provided technical support in the analysis of global climate change, ozone depletion, acid deposition, and electromagnetic field research.
- Dynamic Corporation
 - Staff Scientist. Responsibilities included the preparation of several sections of a major environmental impact statement; evaluation of data submitted to EPA for Federal registration under FIFRA; preparation of Health and Risk Assessment documents; and participation in a multi-state laboratory field audit team for the EPA's Office of Drinking Water and the Environmental Criteria and Assessment Office.

EDUCATION: B.S., Biology, Radford University

NAME: Paul E. Flaherty

AREA OF RESP: Air

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 8 years

- Oversaw the design and implementation of a comprehensive air quality compliance plan for a large aerospace company involving the development of source inventories, regulatory requirements and interpretations, and a software system to manage the information.
- Managed the compliance evaluation project for a large utility's two fossil fuel-fired plants in an urban area. The work included control technology reviews, air quality dispersion modeling, ambient air monitoring, and representing client interest with State and Federal regulatory officials.
- Designed an advanced modeling technique for another utility to address a complex dispersion environment, including development of regulatory acceptable assumptions for a fluid modeling study and the presentation of the study methods and results for State and Federal support.
- Assisted in the development of a state-of-the-art modeling methodology for coke oven emissions and ambient air toxic concentrations. The work was reviewed on both State and Federal levels and approved without comment.
- Managed the PSD air permit applications for MSW, RDF, and Resource Conservation and Recovery Act/Toxic Substances Control Act incinerators for several large energy recovery corporations. The work included technology review, ambient impact assessments for criteria and noncriteria pollutants, ambient monitoring, and representation of clients with State and Federal regulatory personnel.

EDUCATION: B.S., Meteorology, Purdue University

NAME: Joseph A. Fromal, Jr.

AREA OF RESP: Surface Water

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 17 years

- Private Consultant responsible for conducting environmental audits of industrial facilities, acquiring the necessary data and filing National Pollutant Discharge Elimination System (NPDES) permit applications, developing sludge management plans, and developing and implementing site assessment plans and closure plans.
- Virginia Water Control Board. Pollution Control Engineer responsible for compliance inspections for industrial and municipal wastewater treatment systems, developing and implementing river models, issuing and enforcing NPDES and land application permits, and, as a member of a State committee, revising sewerage regulations regarding sludge handling and disposal.

EDUCATION:

M.S., Sanitary Engineering, Virginia Polytechnic Institute and State University (VPI&SU)
B.S., Civil Engineering, (VPI&SU)

NAME: Kathleen Gaisler

AREA OF RESP: Waste Management

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 4 years

- Preparing an environmental compliance manual for a large hazardous waste treatment company with multiple facilities located throughout the United States. Compiling information from various facility documents to create a comprehensive document providing uniform policy for all facilities.
- Assisting in preparing a written evaluation of hazardous waste treatment facility. Evaluation will address issues related to the technical capabilities, regulatory compliance, and financial performance of the facility and will be used by hazardous waste generators who may be potential clients of the facility.
- Researched economic impacts of environmental regulations related to Title III of the Superfund Amendments and Reauthorization Act.
- Supported various emergency response projects involving environmental emergencies, counterterrorists exercises, and earthquakes.
- Prepared reports on hazardous materials accidents and summaries of specific hazardous chemicals for auditing teams.

EDUCATION: B.A., Chemistry, Duke University

NAME: Richard J. Hall

AREA OF RESP: Waste Management

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 10 years

- Participated as Waste Management Specialist for the DOE Tiger Team Assessment of the Energy Technology Engineering Center.
- Developed and implemented environmental management programs at 20 corporate locations. Programs encompass generator requirements including air, water, and hazardous waste management.
- Provided annual training for location environmental representatives in environmental management and compliance. Major issues involved Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).
- Developed and supervised annual audits at each location for environmental compliance and good management. Federal, State, and local regulations were used.
- Developed and implemented safety and health management programs at these locations. Provided and supervised operation of the audit program.
- Performed site assessments of properties preparatory to acquisition and divestment. Primary issues were RCRA, CERCLA, and Clean Water Act.
- Participated in activities at CERCLA sites representing various clients.

EDUCATION: B.S., Electrical Engineering, Massachusetts Institute of Technology

NAME: Gregory T. Haugan, Jr.

AREA OF RESP: Environmental Report Administration

ASSOCIATION: META

EXPERIENCE: 8 years

- META
 - Information Management Specialist. Manages a team responsible for onsite administrative support for the Environmental Subteam during Tiger Team Assessments. Efforts to date include Brookhaven, Sandia National Laboratory, Lawrence Berkeley Laboratory, Argonne Illinois Site, Princeton Plasma Physics Laboratory, Energy Technology Engineering Center, and Sandia National Laboratory, Albuquerque.
- 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: B.A., General Studies, University of Maryland

NAME: Cynthia G. Heckman

AREA OF RESP: National Environmental Policy Act

ASSOCIATION: Oak Ridge National Laboratory (ORNL)/Martin Marietta Energy Systems, Inc.

EXPERIENCE: 6 years

- Performed DOE Tiger Team surveys at the Rocky Flats, FMPC/Fernald, Pantex, Kansas City, Savannah River, Lawrence Livermore National Laboratory, Hanford Site, Argonne Illinois Site and Energy Technology Engineering Center facilities to evaluate the adequacy of existing National Environmental Policy Act (NEPA) documentation.
- Assisted in the development of the NEPA Compliance Audit Protocol used on Tiger Team Assessments.
- Responsible for the maintenance and updating of the DOE NEPA Memoranda-to-File database and Environmental Guidance Program Reference Books on 14 major environmental statutes.
- Duties with the Environmental Technology Division of the MAXIMA Corporation included:
 - Technical support to Oak Ridge National Laboratory programs with specific review of applicable environmental laws and regulations.
 - Technical analyses and management of data bases related to the protection of environmental quality, public health, and occupational health and safety.
 - Spill cleanup technologies review using foams and other retardants on floating hazardous chemicals for the U.S. Coast Guard.

EDUCATION: M.S., Biology, University of Kentucky
B.A., Biology, Thomas More College

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 DOE Tiger Team Assessments.
 - Secretary/Word Processor. Provided administrative support for DOE's Office of New Production Reactors. Also, prepared deliverable 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 database system. Supervised work-study students in that department. Responsible for front desk and all xerox, microfilm and fiche machines.

EDUCATION: Computer Information Systems, Strayer College, Arlington, VA
General Studies, Lord Fairfax Community College, Middletown, VA
General Studies, Shepherd College, Shepherdstown, WV

NAME: William M. Levitan

AREA OF RESP: Special Assistant to the Environmental Team Leader

ASSOCIATION: NUS Corporation

EXPERIENCE: 14 years

- Environmental Subteam Coordinator and Inactive Waste Sites Specialist for the Pantex Plant and Brookhaven National Laboratory Tiger Team Assessments. Inactive Waste Site Specialist for the Rocky Flats Special Assignment Team and the Pinellas Plant and Princeton Plasma Physics Laboratory Tiger Team Assessments. Environment Subteam Coordinator and SARA Title III Specialist on the Oak Ridge National Laboratory Tiger Team.
- Inactive Waste Sites Specialist for the DOE Environmental Survey Program. Participated in Surveys at Argonne National Laboratory, Idaho National Engineering Laboratory, Component Development and Integration Facility, Solar Energy Research Institute, National Institute for Petroleum and Energy Research, Ames Laboratory, and Princeton Plasma Physics Laboratory.
- Environmental Scientist with experience in a broad array of CERCLA-related studies, including preliminary assessments, remedial investigations/feasibility studies, risk assessments, and field investigations.

EDUCATION:

M.S., (Incomplete) Environmental Engineering/Engineering Management, University of Maryland

M.S., Marine Studies, University of Delaware

B.A., Natural Science, Johns Hopkins University

NAME: Joseph Lischinsky

AREA OF RESP: Radiation

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 10 years

- Served as Consultant Health Physicist to various environmental engineering, planning, and law firms specializing in environmental issues. These assignments have included the provision 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 to the decommissioning of major source material manufacturing facilities licensed by both the U.S. Nuclear Regulatory Commission Agreement States Program. Provided support in all matters of regulatory affairs, quality assurance, and compliance aspects of the Decommissioning process.

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

NAME: Richard B. Lynch

AREA OF RESP: Technical Editor

ASSOCIATION: META

EXPERIENCE: 4 years

- META

- Technical Editor/Graphics Specialist. Provides editorial support for the Environmental Subteam during Tiger Team Assessments including text editing, formatting, and graphics production. Efforts to date include Sandia National Laboratory, Livermore; Paducah Gaseous Diffusion Plant; Argonne Illinois Site; Princeton Plasma Physics Laboratory; Energy Technology Engineering Center; and Sandia National Laboratory, Albuquerque. Also, finalizes draft Tiger Team Assessment reports to provide DOE's Office of Special Projects with the final camera-ready copy.
- Provided technical writing and editing support for DOE's Office of New Production Reactors (NP), including writing NP's Correspondence Manual and a variety of technical articles for publication.

- Advanced Sciences, Inc.

- Writer/Editor. Researched, wrote, and edited fact sheets and information briefs on energy conservation and renewable energy topics for a DOE-funded energy information service. Also, wrote press releases and participated in other media outreach activities.

EDUCATION: B.A., General Studies, Louisiana State University

NAME: Christopher B. Martel

AREA OF RESP: Radiation

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 8 years

- Participated in the Tiger Team Assessment of the Energy Technology Engineering Center.
- Evaluated numerous radiation safety programs for government and commercial clients possessing a license with the Nuclear Regulatory Commission (NRC).
- Corporate Radiation Safety Officer for Arthur D. Little (1986-1991). Managed all activities conducted under a Type A broad scope license issued by the NRC. Responsibilities included directing the efforts of two assistants, conducting training, developing programs and procedures, and acting as Chairman of the Radiation Safety Committee.
- Performed risk evaluations for low-level and high-level radioactive waste site performance for Federal and State agencies.

EDUCATION: M.S., Radiological Physics, University of Lowell
B.S., Environmental Sciences, Geology, University of Lowell

OTHER: National and New England Chapter (Officer) of the Health Physics Society

NAME: Margaret Miller

AREA OF RESP: Toxic and Chemical Materials

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 22 years

- Provided Toxic and Chemical Materials evaluation for the Tiger Team Assessment of Sandia National Laboratories, Albuquerque. Assessed compliance in relation to the acquisition, storage, and handling of toxic and chemical materials, which included: laboratory and bulk chemicals, pesticides, chlorofluorocarbons, PCBs, and explosives.
- Response for the development and administration of the Arthur D. Little program for compliance with federal regulations that affect the conduct of nonclinical laboratory studies. Ms. Miller was Quality Assurance Officer from 1979 through 1985. One of four members of the Good Laboratory Practices Working Group, which studied the impact of federal regulations on the conduct of scientific research at Arthur D. Little.
- Managed audits and prepared evaluations (since 1979) of the compliance status of client companies and their potential contractors.
- Managed data research and analysis for the U.S. Air Force Installation Restoration Program and coauthored the guide that is used to assess environmental problems associated with the disposal of military chemicals.
- Researched and analyzed data on toxic and chemical materials on more than 100 projects for the Department of Defense, the Department of Transportation, the National Toxicology Program, and the Environmental Protection Agency. Evaluations included methods of detection and identification for suspected or known contaminants and pollutants and the health and environmental implications of the use and disposal of a variety of commercial and hazardous materials.

EDUCATION:
Postgraduate Chemistry Courses, Tufts University and Northeastern University
M.S., Library and Information Science, Simmons College
B.A., Government (Biology Minor), Wells College

OTHER: American Chemical Society, NY Academy of Sciences

NAME: Hitesh Nigam
AREA OF RESP: National Environmental Policy Act
ASSOCIATION: U.S. Department of Energy, Office of NEPA Oversight
EXPERIENCE: 12 years

- U.S. Department of Energy, Washington, DC
 - Environmental Protection Specialist, Waste Activities Division. Responsible for assuring that waste activities projects at DOE facilities comply with the NEPA and other environmental review requirements that are necessary prior to project implementation.
- U.S. Environmental Protection Agency, Washington, DC
 - Environmental Engineer, Office of Municipal Pollution Control. Responsible for managing the professional engineering aspects in the implementation of national programs to assure compliance of municipal wastewater treatment facilities.
- Maryland Department of Environment, Baltimore, MD
 - Project Manager, Engineering and Construction Program. Responsible for managing the construction grants projects under the Federal Construction Grants Program, per Clean Water Act.
- Prior experience in the environmental field includes evaluation of advanced wastewater treatment and solids handling and disposal processes for several treatment plants. Experience also includes working with hazardous waste.

EDUCATION: M.E., Environmental Engineering, Howard University, Washington DC
B.S., Chemistry, Howard University, Washington, DC

NAME: Joseph W. Nixon, Jr.

AREA OF RESP: National Environmental Policy Act

ASSOCIATION: Energetics, Inc.

EXPERIENCE: 5 Years

- Energetics, Inc., Columbia, MD
 - Technical Associate. Supports DOE's Office of NEPA Oversight in the technical review of NEPA documentation (i.e., Environmental Impact Statements, Environmental Assessments, Categorical Exclusions, etc.). Also responsible for analyzing Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) regulations.
- Geo/Resource Consultants, Inc.
 - Deputy Project Director of EPA's RCRA/Superfund hot line and EPCRA hot line. Responsible for the daily management of both hot lines, regulatory training for employees, and technical oversight.
 - Section Manager of EPA's RCRA/Superfund hot line. Responsible for managing daily hot line activities and responding to technical regulatory issues raised by hot line callers.
 - Information Specialist on EPA's RCRA/Superfund hot line and EPCRA hot line. Responsible for providing prompt, accurate and factual information about RCRA, Superfund, and EPCRA statutory and regulatory requirements and associated policies, as well as technical guidance to callers of diverse backgrounds and varying degrees of regulatory knowledge.

EDUCATION: B.S., Surface Mining Reclamation, Frostburg State University

NAME: Carol Ann Nolen

AREA OF RESP: Environmental Report Administration

ASSOCIATION: META, Inc.

EXPERIENCE: 9 years

- Senior Administrative Assistant, U.S. Department of Energy, Office of Special Projects.
 - Coordinate DOE and contractor administrative functions within the Office of Special Projects.
 - Oversee the production of final Team Assessment reports, and distribution to all DOE sites.
 - Set up and maintain the Tiger Team Assessment site files.
 - Report Administration for the Princeton Plasma Physics Laboratory Tiger Team Assessment.
- Manager, Office Administration, Advanced Sciences, Inc.
 - Hired, trained, and supervised the administrative support staff.
 - Implemented company policies and procedures to all area offices.
 - Purchased office supplies and equipment.
 - Coordinated proposal preparation.
 - Traveled throughout the continental United States for minority business marketing conferences.

EDUCATION: Diploma, Thomas Jefferson High School

NAME: Andrew J. O'Conor

AREA OF RESP: Inactive Waste Sites

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE 11 years

- Team leader for several due-diligence studies involving active mining operations and geological prospects for commercial clients, requiring thorough knowledge of environmental permitting and mining regulations.
- Reclamation Engineer at the Navajo Mine owned by BHP-Utah International prior to joining Arthur D. Little. Responsible for all planning, engineering, and field coordination assuring implementation for design and compliance with Federal and State regulations for surface coal mines.

EDUCATION: M.B.A., University of Chicago
B.S., Mining Engineering, Colorado School of Mines

NAME: Paul J. Pifalo

AREA OF RESP: Quality Assurance

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 18 years

- Evaluated quality assurance capabilities, risk to the government, and contractor quality compliance during site audits as a Department of Defense 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.
- Managed a manufacturing system, certified by the American Society of Mechanical Engineers 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 Department of Defense/DOE projects.
- Extensive manufacturing engineering and management experience in defense electronics, metal fabrications, and 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 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: B.S. General Agriculture, New Mexico State University
M.S. Biology, University of Southwestern Louisiana

NAME: James E. Rice

AREA OF RESP: Groundwater

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 11 years

- Participated in the Tiger Team Assessment of Morgantown Energy Technology Center and the environmental audit of Weldon Springs Site Remedial Action Project.
- Managed Western Geophysical Corporation's Environmental Site Assessment Group, where he develops standard operating procedures for conducting site investigations and developed a corporate training manual to ensure consistency in evaluations conducted.
- Conducted more than 50 environmental site assessments and hydrogeological investigations.
- Designed and implemented a leading-edge geology lab to assist graduate students in a well-logging course.
- As a field technician at Los Alamos National Laboratories, performed water, soil, and sediment sampling for inorganic and radioactive materials.

EDUCATION: M.S., Geology, New Mexico Institute of Mining and Technology
B.S., Geology, New Mexico Institute of Mining and Technology

NAME: Hilton Rivera

AREA OF RESP: Quality Assurance

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 8 years

- As a program administrator, performed environmental regulatory compliance audits, assessments, and appraisals of laboratories to support the U.S. EPA Contract Laboratory Program (CLP) at their contracted laboratories.
- As a Quality Assurance Coordinator, performed data audits in support of the environmental program conducted by the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA).
- Responsible for the coordination of sampling and analysis for geoengineering firms working at Superfund sites, 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: Joseph C. Sabatini

AREA OF RESP: Air

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 8 years

- Performed engineering assessment of air pollution control technology for various production processes, including acrylonitrile, tungsten carbide, lead, and aluminum. These assessments included qualification of waste streams, equipment sizing, and cost estimating.
- Conducted studies in support of asbestos product liability litigation involving asbestos-containing building materials. Testing included simulation of manufacturing and use of products, monitoring for airborne asbestos, and analysis of samples.
- Process engineer with broad experience in the production of metals and inorganic chemicals.

EDUCATION: M.S., Mechanical Engineering (Material Science),
Northeastern University

B.S., Mineral Engineering (Chemical Metallurgy),
Columbia University

OTHER: TMS, ASM, AISE

NAME: Lorene L. Siga

AREA OF RESP: National Environmental Policy Act

ASSOCIATION: Oak Ridge National Laboratory, Martin-Marietta Energy Systems, Inc., Oak Ridge, Tennessee

EXPERIENCE: 11 years

- Oak Ridge National Laboratory
 - Provide technical assistance to the U.S. Department of Energy Office of NEPA Oversight. Developed the draft DOE NEPA Compliance Audit Protocol, and assisted in the development of the DOE NEPA Compliance Guide. Participated as a NEPA specialist at ten Tiger Team Assessments.
 - Team Leader. Oak Ridge National Laboratory environmental compliance assessments for the U.S. Air Force under their Environmental Compliance and Management Program.
 - Preparation of the DOE Regulatory Compliance Guide for Prevention of Significant Deterioration Under the Clean Air Act.
 - Basic research in the effects of air pollutants on vegetation.
 - Preparation of terrestrial ecology sections of Environmental Impact Statements (EISs) for coal-fired, oil-fired, and nuclear power plants; U.S. Army disposal of chemical agents and munitions; and U.S. Air Force base closures and reuse.

EDUCATION: Ph.D., Botany and Microbiology, Arizona State University

NAME: Andrew H. Smyth

AREA OF RESP: Groundwater

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 8 years

- Participated in Tiger Team Assessments of Sandia National Laboratories, Albuquerque.
- Managed the geotechnical aspects of Arthur D. Little's SiteWATCH assessment program. The objective of this program was to classify commercial treatment, storage, and disposal (TSD) facilities into their relative risks to the user, based on their historical performance, operations, and siting characteristics. Facilities included incinerators, landfills, and solvent recovery operations. Particular responsibilities included inspecting treatment, storage, and disposal facilities, assessing regulatory compliance, and evaluating general locational and siting considerations. Over 50 TSD facilities were inspected.
- Evaluated the contaminant fate and transport characteristics of numerous contaminated sites. Included in these characterizations were the development of site sampling programs, installation of groundwater and soil monitoring systems, evaluation of site chemical data and computer modeling of geohydrologic systems, and selection and evaluation of remedial technologies.
- Participated in over 100 environmental audits and assessments at various chemical, industrial, government, utility, mining, machining, transportation, and fossil fuel production and distribution companies.

EDUCATION: M.S. Geology (Civil and Geologic Engineering minors),
New Mexico State University
B.A. Geology, Ohio Wesleyan University

NAME: Joseph K. Swiniarski

AREA OF RESP: Quality Assurance

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 29 years

- Participated in Tiger Team Assessment of the Energy Technology Engineering Center.
- Evaluated quality assurance capabilities and GLP compliance for testing laboratories of a major cosmetics company.
- Managed Arthur D. Little's animal laboratories (1984-1989). Responsibilities included assurance of compliance with NIH guidelines, FDA and Commonwealth of Massachusetts regulations, assuring that Arthur D. Little animal facilities meet NTP requirements for a barrier toxicology testing laboratory.
- Experimental therapeutic and toxicological scientist with broad experience in laboratory management, radiation biology, quality assurance monitoring for Arthur D. Little's Chemical and Life Sciences Section.

EDUCATION: M.A., Biology, Radiation Biology, Boston University
B.S., Biology (Chemistry minor), Northeastern University

OTHER: AAAS, NY Academy of Science, AALAS, LAmA AALAS, LAmA

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 Department of Energy 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: J. Warren Webb, Ph.D.

AREA OF RESP: National Environmental Policy Act

ASSOCIATION: Oak Ridge National Laboratory, Environmental Sciences Division

EXPERIENCE: 13 years

- Participated as NEPA specialist at DOE Tiger Teams Assessments at Nevada Test Site, Savannah River Site, Hanford Site, and Argonne Illinois Site.
- Impact analyses of nuclear power plants, geopressure and geothermal resource development, synthetic fuels, oil shale mining and processing, uranium mining and milling, and small hydropower development.
- Analysis of cumulative impacts of multiple-hydropower development in the Owens River basin, California and Nooksack River Basin, Washington.
- Analysis of impacts of small-scale hydropower development nationwide with and without tax and financial benefits.
- Review of Environmental Impact Statements, Environmental Assessments, and associated documents dealing with stabilization of uranium mill tailings.
- Evaluation of issues, data needs, and research needs related to the effects of the expected climatic warming on unmanaged ecosystems.
- Basic research on insect populations and communities, concentrating on their roles in ecosystems and relationships with plants.

EDUCATION: Ph.D. Ecology, Rhodes University, South Africa
Graduate Study, Cornell University
B.A., Zoology, University of Texas

NAME: Stewart G. Young

AREA OF RESP: Inactive Waste Sites

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 15 years

- 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 (EPRI). 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 (GRI). Has also directed investigations of the "sick building syndrome."

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

OTHER: APHA, ISEE, ISEA

APPENDIX A-3

BIOGRAPHICAL SKETCHES of SAFETY AND HEALTH SUBTEAM MEMBERS TIGER TEAM ASSESSMENT IDAHO NATIONAL ENGINEERING LABORATORY

APPENDIX A-3-1

**BIOGRAPHICAL SKETCHES of SAFETY AND HEALTH SUBTEAM MEMBERS
TIGER TEAM ASSESSMENT
IDAHO NATIONAL ENGINEERING LABORATORY
EG&G**

NAME: Bal M. Mahajan

AREA OF RESP: TSA Team No. 1 Leader

ASSOCIATION: Office of Safety Appraisals, Headquarters, Department of Energy.

EXPERIENCE: 27 years

- U.S. Department of Energy, Germantown, MD
 - Team Leader/Assistant Team Leader for Technical Safety Appraisals (TSAs) of DOE Facilities.
 - Team Member on Feed Materials Production Center TSA.
- National Institute of Standards and Technology
 - Principal Investigator for Experimental and Theoretical Research in: Gas Absorption Kinetics, Evaluation of Indoor Air Quality and Air Cleaning Equipment, Hydraulics of Water Supply and Drainage Systems, Natural Convective Heat and Mass Transfer, Hazard Analysis and Technical Rationale for developing Test Protocols and Safety Performance Standards for various products and equipment.
- University of Maryland
 - Teaching: Power Plant Design and Operations, HVAC Systems, Heat Transfer, Thermodynamics, and Mechanics.
 - Research: Fluid Jet Mixing, Pollution from Power Plants, and Emissivity of Gas Particle Mixtures.

EDUCATION: Ph.D., Mechanical Engineering, University of Maryland
M.S., Mechanical Engineering, University of Maryland
B.S., Physical Sciences, Panjab University, India

OTHER: Professional Engineer, State of Maryland
Member of ASME, ASHRAE, ATM, and World Safety Organization

NAME: Ronald E. Alexander

AREA OF RESP: Personnel Protection

ASSOCIATION: Environmental Management Associates

EXPERIENCE: 22 years

- Environmental Management Associates
 - Hazardous Material Management Consultant: Provide OSHA compliance assistance, hazardous waste assistance, environmental liability assessments, Safety Analysis Reports, permitting assistance, and technical safety assessment assistance.
- 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: 47 years

- John W. Arendt Associates, Inc.
 - Senior Engineer: Provide technical assistance in the fields of: (1) UF₆ 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 in fields 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 Nuclear Technology.
 - Superintendent of Inspection, 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 (ANSI).
Chairman, ANSI N14 Standards Committee, Packaging and Transportation of Radioactive Materials.
Member, ANS, ASME, ASQC, ASNT, INMM, NSPE, TSPE, and ADPA.

NAME: J.R. "Joe" Barkman

AREA OF RESP: Operations

ASSOCIATION: Oak Ridge Chemical Consultants, Inc.

EXPERIENCE: 45 years

- Technical Safety Appraisals, DOE
 - DOE Tiger Team of Hanford, WA Site (Technical Support).
 - 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.
 - 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: Mayhue A. Bell

AREA OF RESP: Site/Facility Safety Review

ASSOCIATION: Private Consultant

EXPERIENCE: 30 years

- Management Consultant
 - Management Appraisals, Technical Safety Appraisals.
- U.S. Department of Energy, Washington, D.C.
 - Managed the DOE Reactor Safety, Fusion Safety, Space Power System Safety, and Emergency Preparedness Programs: Policy and safety requirements development; planning, coordinating, and performing management and technical safety appraisals, individually and as team leader.
- 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
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 to 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: John S. Dale

AREA OF RESP: Fire Protection

ASSOCIATION: Westinghouse Hanford Company

EXPERIENCE: 11 years

- Westinghouse Hanford Company
 - Senior Engineer. Responsible for providing direct guidance and specifications to all levels of management and engineering departments on the implementation of fire protection requirements. Prepare company fire protection standards. Conduct technical engineering reviews of plant modifications, new construction projects, and fire protection improvements. Specifically assigned to the Fast Flux Test Facility. Serve as company liaison to the Department of Energy and outside safety review teams on fire protection issues.
- UNC Nuclear Industries
 - Senior Safety and Fire Protection Engineer. Lead, appraise, and audit all facets on the fire protection program at the N-Reactor and N-Reactor Nuclear Fuels Manufacturing Facility. Serve as company liaison to Department of Energy and outside safety review teams.
- Industrial Risk Insurers
 - Engineer. Evaluate fire protection at all types of industrial properties for compliance with improved risk fire protection guidelines. Draft formal reports and recommendations for corporate management of insured properties. Consult with owners, architects, and contractors on design of new facilities.

EDUCATION: B.S., Forest Resources, University of Washington

NAME: Woodson B. Daspit

AREA OF RESP: Auxiliary Systems

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 12 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: 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: Denelle E. Friar

AREA OF RESP: Training and Certification

ASSOCIATION: Westinghouse Hanford Company

EXPERIENCE: 18 years

- Nuclear Safety Administrator

- 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 QA on special teams, and 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: Richard J. Kobeliski

AREA OF RESP: Fire Protection

ASSOCIATION: Westinghouse Hanford Company

EXPERIENCE: 17 years

- Westinghouse Hanford Company
 - Manager, Health and Safety Integration and Policy: Development and coordination of company standards and requirements for industrial hygiene, industrial safety, fire protection, radiological and nuclear safety.
 - Manager, Industrial Safety and Fire Protection: Management of the occupational safety, health and fire protection programs for the consolidated Hanford Operations and Engineering contract.
 - Senior Fire Protection Engineer: Coordination of the fire protection programs for Hanford's N-Reactor. Responsible for upgrading the status of the fire protection systems and programs to comply with DOE and NRC requirements.
- Industrial Risk Insurers
 - Engineering Manager: Managed the fire protection engineering and administrative functions for accounts in the northwestern United States. Responsible for the coordination of inspections, account engineering work, and the development of engineering personnel in the field of HPR property loss prevention.
 - Engineering Supervisor: Supervisor of field engineering staff servicing HPR accounts. Duties included approval of customer specifications and design drawings of sprinkler systems, combustion controls, special extinguishing systems, and other risk protection features.
 - Fire Protection Engineer: Conducted field engineering work which included detailed inspection and reporting of construction, occupancy, special hazard evaluations, and loss investigations as a basis for proper risk analysis by underwriters.

EDUCATION: B.S., General Studies, Eastern Oregon State College
A.S., Civil Engineering, Hartford State Technical College

NAME: Bernard R. Kokenge

AREA OF RESP: Team Advisor

ASSOCIATION: Private Consultant

EXPERIENCE: 25 years

- Private Consultant
 - TSA/Tiger Team Member on 11 Headquarters, DOE, Appraisals; DOE Headquarters-Consultant on Special Assignments; DOE-Price-Anderson Amendment Act Visiting Team.
- Kentucky Christian College
 - Vice President, Strategic Planning and Program Development.
- Monsanto Research Corporation, Mound Plant
 - Associate Director of Mound Plant: 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, development of plutonium waste management, tritium process development for DOE 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: O. Clinton Kolar

AREA OF RESP: Criticality Safety

ASSOCIATION: Evergreen Innovations, Inc.

EXPERIENCE: 40 years

- Private Consultant
 - Participant in five Technical Safety Appraisals (TSAs) prior to that at INEL (SRL, PGDP, ORNL, SNL, and METC).
- Lawrence Livermore National Laboratory, Livermore, CA
 - Nuclear criticality safety: Responsible for nuclear criticality safety program 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: Ph.D., Physics, University of California at Berkeley
B.A., Physics, University of California at Los Angeles

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: Laurent P. Laroche, M.D.

AREA OF RESP: Medical Service

ASSOCIATION: Private Expert

EXPERIENCE: 45 years

- Consulting with government and private agencies offering expertise in medical services with respect to medical organization, administration, documentation, quality assurance, and clinical treatment
- Consultant, Southern Bell.
- Southern Regional Medical Director, AT&T Health Affairs
- Associate General Medical Director, AT&T Technologies
- Associate General Medical Director, Western Electric
- Medical Director Atlanta Works, Western Electric
- Medical Director Cape Canaveral & Kennedy Space Center, Pan American World Airways
- Private Practice

EDUCATION: M.D., Charleston College, Charleston, SC
B.S., Medical University of South Carolina
University of Maryland

OTHER: Diplomate, American Board of Preventive Medicine
Certified, Occupational Medicine
Fellow, College of Preventive Medicine
Fellow, American College of Occupational Medicine
Licensed in Florida, Georgia, North & South Carolina

NAME: James A. Martin, Jr.

AREA OF RESP: Emergency Preparedness

ASSOCIATION: Evergreen Innovations, Inc.

EXPERIENCE: 40 years

- U.S. Nuclear Regulatory Commission
 - Emergency planning and response
 - Accident consequences assessment
 - Probabilistic Risk Assessment
 - Health physics
 - Radiation protection
- U.S. Environmental Protection Agency
 - Developed and applied dispersion, dose, environment contamination and health effects for effluents and emissions from nuclear power plants.
 - Participated in development of EPA Protective Action Guides.
- Moleculon Research Corporation
 - Performed dosimetry in underground nuclear weapons test.
- International Business Machines Corporation
 - Performed space and weapons radiation effects tests on electronic parts and systems.

EDUCATION: M.S., Physics, Temple University
B.S., Physics, University of Scranton

OTHER: Member, American Nuclear Society
Member, Health Physics Society
Member, Sigma Pi Sigma

NAME: Thomas J. Mazour

AREA OF RESP: Training and Certification, and Safety/Security Interface

ASSOCIATION: Private Consultant

EXPERIENCE: 20 years

- Private Consultant
 - Participated in 9 Tiger Team Assessments and 21 Technical Safety Appraisals.
 - Developed and presented training programs for DOE site-surveillance personnel and DOE Tiger Team members.
 - Supporting development of nuclear facility training programs to meet DOE Training Accreditation Program.
 - Evaluated operations, 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.
 - Developed training programs for DOE Category A reactor operators and supervisors.
- Burns & Roe, Inc.
 - Design engineer and licensing engineer for Clinch River Breeder Reactor and NRC licensed PWR.
 - U.S. Navy: Nuclear training officer - nuclear reactor operations, nuclear weapons officer.

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

NAME: Barbara J. McKenzie

AREA OF RESP: Coordinator

ASSOCIATION: Lawrence Livermore National Laboratory

EXPERIENCE: 31 years

- Lawrence Berkeley National Laboratory, Director's Office
 - Supervisor, Word Processing for Safety and Health Subteam, Lawrence Berkeley National Laboratory Tiger Team Assessment
- Lawrence Livermore National Laboratory, Physics Department
 - Word Processor for TSAs, LLNL Site Tiger Team Assessment
 - Administrator: Performed personnel and salary management; supervised administrative personnel; resource management
 - Coordinator, Grand Challenges Conference, Dec. 1988, Molokai, HI
 - Coordinator for Director's Distinguished Lecturer Series, 1980-1984

EDUCATION: A.A., Graphic Design, Los Positas Junior College

NAME: Leon H. Meyer

AREA OF RESP: Organization and Administration

ASSOCIATION: The LHM Corporation

EXPERIENCE: 38 years

- Technical expert under contract to Oak Ridge Associated Universities. Served on 32 Technical Safety Appraisals for DOE/EH
- Savannah River Plant, E.I. DuPont 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. DuPont 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. DuPont 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 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: Paul M. Mossman

AREA OF RESP: Medical Services

ASSOCIATION: Private Expert

EXPERIENCE: 40 years

- Independent Expert Consultant
 - Consulting with government and private agencies offering expertise in the medical services field with respect to organization and administration; procedures and documentation; and medical treatment.
- Sandia National Laboratories
 - Medical Director, responsible for the overall management of the Medical and Environmental Health Directorate.
 - Associate Medical Director of Sandia National Laboratories.
- Arabian American Oil Company (ARAMCO) Dhahran, Saudi Arabia
 - Occupational Health Physician
- Northern California State
 - General Practitioner
- U.S. Army
 - Captain in Medical Corps

EDUCATION: M.D., George Washington University, Washington, D.C.
M.P.H., Occupational Health, University of California,
Berkeley

OTHER: Licensed, National Board of Medical Examiners, State of California and State of New Mexico
Diplomate of American Board of Family Practice
Diplomate of American Board of Preventive Medicine in Occupational Medicine

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 Safety and Quality Programs (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 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: Richard J. Serbu

AREA OF RESP: EH Senior Manager

ASSOCIATION: Office of Safety Appraisals, Headquarters, Department of Energy

EXPERIENCE: 24 years

- U.S. Department of Energy, Washington, D.C.
 - Acting Director, Safety Inspections, Division, EH-331.
 - Acting Director, Safety Technology Division, EH-332.
 - Team Leader for Technical Safety Appraisals
- Tennessee Valley Authority, Chattanooga, TN
 - Corporate Health Physicist, TVA Office of Nuclear Power.
 - TVA Central Emergency Response Team
- U.S. Nuclear Regulatory Commission, Rockville, MD
 - Health Physicist: Technical reviewer for radiation protection and emergency preparedness for licensing and design changes for reactors, prepared safety evaluation reports, performed inspections and team evaluations, evaluated reactor emergency preparedness exercises.
 - Task Manager for NRC/INPO Coordination Plan for Radiological Protection Activities.
 - Contracts Project Manager for work with DOE Labs.
 - NRC Incident Response Team.
- General Electric, Schenectady, NY
 - Knolls Atomic Power Lab., Kesselring Site.
 - Manager, Radiological Monitoring.
 - Lead Engineer, Dosimetry and Health Physics.
 - Lead Engineer, Radiological Training.
 - Radiological Controls Shift Supervisor.
 - Instructor, Chemistry and Radiological Controls,
 - Nuclear navy Engineering Laboratory Technician.
 - Kesselring Emergency Response Team.
- U.S. Air Force
 - Officer, Pilot/Aircraft Commander.
 - Standardization/evaluation aircrew member.

EDUCATION: B.A., Chemistry, State University College at Potsdam, NY

OTHER: Member Health Physics Society

NAME: Bryan L. Stemen

AREA OF RESP: Fire Protection

ASSOCIATION: Westinghouse Materials Company of Ohio

EXPERIENCE: 6 years

- Westinghouse Hanford Company
 - Fire Protection Engineer: Conduct Fire Protection Engineering Surveys, coordinate and assist with development of company fire protection standards, remediating problems identified through third-party, audits of facility fire protection practices, technical support to facility and operations engineers, developing DOE responses, participating on Task Teams to develop resolutions for special problems, assisting with code and standard related problems, serving as the fire protection representative for the emergency control center team, and conduct design and project reviews.
- ARCO Alaska Incorporated
 - Summer Fire Protection Engineer, Kuparuk Fire Department: Responsibilities included: fire/safety program development, classroom instruction, live fire training instruction, portable extinguisher and SCBA maintenance and fire brigade activities, at ARCO's Kuparuk Field Operations (North Slope).
- Plano Texas Fire Department
 - Fire Administration Intern: Responsibilities included: fire protection systems testing, inspections, noise level monitoring of apparatus, code work, sprinkler plan reviews, and site plan reviews.
- Phoenix Arizona Fire Department
 - Fire Administration Intern: Research Planning and Development: Responsibilities included: ambulance implementation scheduling, research and planning of future apparatus, computer aided dispatch geofile work, emergency response mapping projects and general support to the research and planning division.

EDUCATION: B.S., Fire Protection and Safety Engineering Technology, Oklahoma State University.
A.A.S., Fire Protection and Safety Engineering Technology, Oklahoma State University.

NAME: Shelby J. Turner

AREA OF RESP: Maintenance

ASSOCIATION: Westinghouse Hanford Company

EXPERIENCE: 20 years

- Westinghouse Hanford Company
 - Health and Safety Assurance appraisals, audits and surveillances at Plutonium/Uranium Extraction Plant.
- Naval Reactors Field Office at Puget Sound Naval Shipyard
 - Assisted Naval Reactors Headquarters with five biannual audits of Shipyard work and testing.
 - Assisted Naval Reactors Headquarters with two audits of overhaul maintenance and testing at Naval Reactors Facility, Idaho Falls, Idaho.
 - Conducted routine appraisals, audits and surveillances of Shipyard work and testing during all phases of nuclear ship overhauls.
 - Qualified on four Navy pressurized water reactor plants (S5W, D2G, A2W, and CIW).
- Nuclear powered submarines and nuclear submarine support tender.
 - In charge of engine room mechanical maintenance on submarines and in charge of radiological controls for maintenance on the submarine tender.
- Naval Reactors Prototype, Windsor Locks, CT.
 - Taught mechanical systems in the classroom phase.

EDUCATION: Naval Nuclear Power Prototype, Windsor Locks, CT
Naval Nuclear Power School, Bainbridge, MD
Oak Grove High School, Oak Grove, LA

NAME: Bette L. Vallario

AREA OF RESP: Radiation Protection

ASSOCIATION: Applied Safety Technology, Inc.

EXPERIENCE: 15 years

- Applied Safety Technology (ASTI), 1989 - present
 - Vice President, ASTI: Applied health physics consulting services including technical safety reviews, procedure development, and technical support to operational programs.
- U.S. Department of Energy, 1985 - 1989
 - Senior Health Physicist, Environment, Safety and Health: Participant in audit and review teams including Technical Safety Appraisals. Technically managed and contributed to development of radiation protection standards and policies; applied health physics research and development programs; DOE Laboratory Accreditation Program for Personal Dosimetry; Radiation Exposure Information Recording System; and Health Physics Codes of Good Practice for Uranium and Plutonium Facilities. Participant in TRADE Radiation Protection Training Special Interest Group.
- Battelle Pacific Northwest Laboratory, 1978 - 1985
 - Senior Research Scientist, Health Physics Department: Deputy Program Manager to DOE Health Physics Support and Assistance Program, Technical managed and contributed to applied health physics research and development programs. Developed radiation protection training programs and manuals. Training coordinator for Battelle Radiation Protection Program. Coordinated and instructed Hanford Intercontractor Program for radiation protection technician training.
- Purdue University, 1974 - 1978
 - Instructor for health physics instrumentation laboratory courses and performed routine surveillance activities for Purdue Radiation Safety Office.

EDUCATION: Ph.D., Bionucleonics (Health Physics), Purdue University
M.S., University of Nebraska
B.S., University of Nebraska

OTHER: Member, Health Physics Society
NCRP Committee 57 Subgroup on Radiation Protection Records
Health Physics Society Standards Committee on Extremity
Dosimetry

NAME: Edward J. Vallario

AREA OF RESP: Radiation Protection and Experimental Activities

ASSOCIATION: Applied Safety Technology, Inc.

EXPERIENCE: 35 years

- Applied Safety Technology (ASTI), Inc., 1989-Present
 - President, ASTI: Applied health physics consulting services including Technical Appraisal Team Leader for National Laboratory, performed Technical Safety Reviews at several DOE sites, provided technical support to DOD and operational health physics support to DOE.
- U.S. Department of Energy/ERDA/AEC, 1961-1988
 - Acting Director Radiological Controls Division, Chief Health Physics Branch, and Senior Health Physicist: Designated as DOE Lead Technical Manager as well as contributor for the development of radiation protection policies, orders, standards, and guides. Performed DOE-wide Health Physics Appraisals over a period of 29 years; developed the Technical Safety Appraisal (TSA) concept and radiological lines of inquiry for the TSA program. Developed the Time Cycle Appraisal Assessment Program (T-CAPP) matrix methodology used by DOE Field Organizations. Technically managed the DOE Applied Health Physics Research Program. Innovated and implemented the DOE Laboratory Accreditation Program throughout DOE. Technically managed the DOE Health Physics Codes of Good Practice. Established the Advisory Panel on Accelerator Radiation Protection. Represented DOE/ERDA/AEC on Nuclear Energy Agency, International Atomic Energy Agency, and Interagency Committees. Established and conducted numerous technical workshops.
- Combustion Engineering Nuclear Division (CE), 1955-1961
 - Health Physicist for CE Nuclear Division, Windsor, CT. and Supervisor Health Physics, SL-1 Reactor, Idaho.

EDUCATION: B.S., Biology/Psychology, Brooklyn College
Oak Ridge Institute Nuclear Studies
Graduate Studies, Physics, Columbia Univ. and Hartford Univ.

OTHER: U.S. Technical Advisor to International Standards Organization (ISO) Subcommittee 2, Radiation Protection
Chairman of International Electrotechnical Commission (IEC)
Working Group B5, Radiation Protection Instrumentation
Past Chairman of Health Physics Society Standards Committee

NAME: Thomas L. Van Witbeck

AREA OF RESP: Maintenance and Operations

ASSOCIATION: TOMA Enterprises

EXPERIENCE: 30 years

- TOMA Enterprises
 - General Manager: Provide services to government and commercial nuclear industry in the areas of operations, maintenance, and safety.
- SCIENTECH, Inc.
 - Provided project management and technical consulting services to government agencies and the utility industry.
- PLD Energy Services
 - Vice President: Nuclear plant operations services.
- Energy Incorporated
 - Vice President: Maintenance management systems, plant operations and quality assurance services.
 - Director: Management and quality assurance audits and technical support of nuclear utilities.
 - Group Manager: Onsite team to assess the Three Mile Island accident.
 - Principal Consultant: Technical support of commercial reactors and DOE facilities and programs.
- Westinghouse Electric Corporation
 - Shift Supervisor/Supervisory Engineer: Commercial nuclear plant start-up and testing.
- Oregon State University
 - Reactor operator and health physicist
- U.S. Navy
 - Petty Officer in charge of water chemistry and radiological programs aboard USS Bainbridge DLGN25.
 - Instructor U.S. Navy Nuclear Power School.

EDUCATION: B.S., Nuclear Engineering, Oregon State University
U.S. Navy Engineering Laboratory Technician School
U.S. Navy Nuclear Power School

OTHER: Registered Professional Engineer
Licensed Reactor Operator (OP-2315)

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
 - 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, N.C. State University
B.S., Nuclear Engineering, N.C. State University
U.S. Army Command and General Staff College

OTHER: Member, Society of American Military Engineers

NAME: Stephanie G. West

AREA OF RESP: Coordinator

ASSOCIATION: Westinghouse Materials Company of Ohio

EXPERIENCE: 17 years

- Westinghouse Materials 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, and the Sandia National Laboratories Tiger Team Assessment in May 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. This entailed developing tour script, helping with introduction videos, training tour bus escorts and speakers, making presentations to bus company and DOE site office, and was troubleshooter on the day of event.
 - Word Processor for TSAs from 1986-1988. 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.
 - Served 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 Br. - Accounting I
Secretarial Grid - Oxford, OH
Proof-a-Matics Instructor

NAME: William J. Zielenbach

AREA OF RESP: Technical Support

ASSOCIATION: Battelle Columbus

EXPERIENCE: 35 years

- Battelle Columbus

- Technical Assurance Manager, D&D Battelle Columbus Nuclear Material Facilities.
- Staff Scientist: Security Evaluations (3) and Technical Safety Appraisals (12) of DOE facilities; nuclear package QA.
- Project Manager; Nuclear fuel cycle case studies and facility safety analysis.
- Project Leader and Member: Various programs for design and operation of irradiation experiments for Materials Testing Reactor, Engineering Test Reactor, Battelle Research Reactor, Experimental Breeder Reactor-II, University of Michigan Reactor (fueled and nonfueled).
- Researcher: Development of high-temperature air frame bearings and seals, and naval bearings; materials development for Aircraft Nuclear Propulsion program.

EDUCATION: M.S., Nuclear Engineering, Ohio State University
B.S., Chemical Engineering, University of Pennsylvania

OTHER: Member, American Nuclear Society

APPENDIX A-3-2

BIOGRAPHICAL SKETCHES of SAFETY AND HEALTH SUBTEAM MEMBERS
TIGER TEAM ASSESSMENT
IDAHO NATIONAL ENGINEERING LABORATORY
ARGONNE NATIONAL LABORATORY-WEST

NAME: Charles Grua

AREA OF RESP: TSA Team No. 2 Leader

ASSOCIATION: Office of Safety Appraisals, Headquarters, Department of Energy

EXPERIENCE: 34 years

- TSA Team Leader, Office of Safety Appraisals
- 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 Engineer, National Institutes of Health, Department of Health, Education, and Welfare
- Applications 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 Control

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 Phillipines
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 Society of Fire Protection Engineers

NAME: Lorin C Brinkerhoff

AREA OF RESP: Organization and Administration

ASSOCIATION: Private Consultant

EXPERIENCE: 37 years

- Private Consultant associated with SCIENTECH, Inc., Oak Ridge Associated Universities, and EG&G Idaho, Inc.
- Technical Safety Appraisal Team Leader, DOE Office of Safety Appraisal
- Acting Reactor Safety Branch Chief, DOE Headquarters
- Senior Nuclear Safety Specialist, Atomic Energy Commission (AEC), Energy Research and Development Administration (ERDA), and DOE
- Senior Nuclear Engineer, Aerojet General Corp., Nerva Program, Nuclear Rocket Development Station (NRDS), Nevada
- Manager, Nuclear Critical Facility, Lawrence Livermore National Laboratory
- Reactor Foreman, Phillips Petroleum Co., Idaho Test Site
- Graphite Studies Group, General Electric Co., 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: Lance Cole

AREA OF RESP: Non-Reactor Operations

ASSOCIATION: WASTREN

EXPERIENCE: 16 Years

- Hazardous and Nuclear Waste Management Consultant for one year: Specialize in DOE waste management programs.
- Technical Support Principal Engineer for Hazardous and Mixed Waste Storage Facilities for two years: Provided technical support to the EG&G Idaho interim status Hazardous Waste Storage Facility and the Mixed Waste Storage Facility.
- Eight years of 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) for four years:
 - 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 contact-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: Anthony N. Fasano

AREA OF RESP: Packaging and Transportation

ASSOCIATION: Viking Systems International - Private Consultant

EXPERIENCE: 38 years

- Consultant to private utilities operating nuclear reactor power generation facilities and to state and federal and government 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, prudence, allegation and concerns, self assessments based on NRC SALP, and health physics.
- AEC/NRC (1971-1984) serving 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; prerequisite, preoperational, startup and ascension to power
 - Inspected conduct of operation at nuclear power plants
 - Conducted performance appraisals as team member of the Performance Appraisal Team and investigation of the TMI-2 accident (NUREG 0600)
 - Provided oversite of the I&E area for TMI-site as Section Chief monitoring operations, clean up, ALARA, health physics, and waste accumulation and shipment.
- Previous 18 years 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 managing the Engineering Division.
- From 1953-1958 associated with Brookhaven National Laboratory (BNL) and DOD involved in facility design for experiments at the BNL, detector development, and experiment assistance.

EDUCATION: M. Ch.E., New York University
B. Ch.E., Clarkson College of Technology

NAME: Leo G. Faust

AREA OF RESP: Radiological Protection

ASSOCIATION: Battelle-Pacific Northwest Laboratories

EXPERIENCE: 32 years

- Battelle-Pacific Northwest Laboratories
 - 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
- 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: Gary J. Gottfried, CIH

AREA OF RESP: Personnel Protection

ASSOCIATION: Apex Environmental, Inc.

EXPERIENCE: 16 years

- Apex Environmental, Inc.

- Principal, Industrial Hygienist
- Responsible for industrial hygiene, public/occupational health and safety, and environmental programs
- Manages and performs studies in areas of asbestos programs, indoor air quality assessments, environmental audits, exposure assessment and control, hazard assessment and control, health and safety program development/implementation, and industrial hygiene surveys

- Biospherics Incorporated

- Vice President (Latest Position) Laboratory and Industrial Hygiene Services
- Responsible for the operations of the Industrial Hygiene and Laboratory Divisions, including technical and business management. Directed over 100 industrial hygienists, chemists and environmental scientists.
- Managed major industry and government contracts; performed technical programs as an industrial hygienist and environmental chemist; led and managed major occupational health and environmental assessments, industrial hygiene surveys, laboratory studies, and health and safety programs; concentrated in the petroleum industry, utilities, laboratories, and manufacturing facilities.

EDUCATION: B.S., Chemistry, Purdue University

OTHER: Certified in the Comprehensive Practice and Chemical Aspects of Industrial Hygiene by the American Board of Industrial Hygiene, 1982

EPA Accredited Asbestos Inspector and Management Planner
Past President, Vice President and Treasurer, AIHA,
Potomac Section, 1985-1989

NAME: Philip J. Grant

AREA OF RESP: Technical Support

ASSOCIATION: Vice President, WASTREN Inc.

EXPERIENCE: 28 years

- WASTREN Inc., Germantown, MD. Supporting DOE EM-30 and EM-50 in NLLW programs in greater than class C waste analysis, transportation assessments, regulatory compliance, and roadmap development. Supporting DOE EH in technical safety appraisals, tritium assessments, and regulatory issues. Performance appraisal for DOE at West Valley Nuclear Services and INEL PREPP for Order compliance. D&D, SAR's, and Licensing Support to GPU at TMI.
- EG&G Idaho at INEL and TMI at Middletown, PA. Program Manager, TMI Cleanup including defueling support, reactor accident analysis, fuel and waste transportation programs, and technology transfer. Program Manager, Spent Fuels/Civilian High Level Waste programs, Responsibility for fuel rod consolidation programs, cask development, and transportation analysis support. Readiness Review Chairman for several DOE-INEL waste and fuel transportation programs.
- U.S. Nuclear Regulatory Commission, Bethesda, MD. Branch Chief, TMI Technical Support, NRR. Responsible for development of PEIS and SARs for major cleanup activities and to assess and inspect licensees operations and waste processing activities. TMI Action Plan (NUREG 0737) Project Coordinator and responsibilities in areas of lessons learned for facility/systems modifications, procedure requirements, emergency response and accident sampling requirements. Development and implementation of 10CFR51 on NEPA compliance and performance of EA's and Environmental Impact Statements.

EDUCATION: B.S., Chemistry, University of Pittsburgh, PA.
M.S., Business Administration, George Washington University, DC.

OTHER: Member of American Nuclear Society and Committees on Accident Sampling Equipment and Analysis.

NAME: David M. Johnson

AREA OF RESP: Auxiliary Systems

ASSOCIATION: WASTREN, Inc.

EXPERIENCE: 21 years

- Resident inspector for seven years working for the U.S. Nuclear Regulatory Commission. This included assignments at the Three Mile Island Unit 1 facility and the Benner Valley Nuclear Power Station. Activities included evaluation of NRC licensee operations, maintenance, and engineering support areas.
- Safety evaluation and technical specification review assignments for the NRC program for reviewing licensee response to various NRC initiatives such as bulletins and generic letters.
- Test Engineer for fourteen years with the Naval Reactors program at various naval shipyards. Duties included maintenance and operations control of nuclear submarine overhaul activities. This included controlling maintenance work and conducting post maintenance testing including reactor start-up and power range testing.

EDUCATION: B.S., Mechanical Engineering, University of Nebraska 1970

NAME: Ernest W. Johnson

AREA OF RESP: Maintenance

ASSOCIATION: Private Consultant

EXPERIENCE: 27 years

- Technical Expert under contract to Oak Ridge Associated Universities and EG&G Idaho
- Participant on eleven 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 Pilot Diagnostic Evaluation of Maintenance at the Y-12 site
- 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: John H. Johnson
AREA OF RESP: Quality Verification
ASSOCIATION: Private Consultant
EXPERIENCE: 16 years

- President, J-E-T-S (Nuclear Consulting Company). Provide consulting services to commercial and government clients related to nuclear quality programs, training, procedure development, and productivity improvement.
- BARTECH, Inc. (Nuclear Consulting/Technical Services). Provided consultant services to commercial and government clients in the areas of nuclear quality assurance and personnel training.
- Branch Manager, Corporate Director of Quality Assurance, RA Weirch & Associates (Nuclear Technical Services/Consulting Company). Provided consultant services to nuclear utilities and the USNRC in areas of quality assurance and training. Certified Level III per ANSI N.45.2.6 for all inspection disciplines.
- Quality/Training Administrator, Newberg Corporation (Nuclear Design/Construct Company). Responsible for management of corporate training and qualification program for 4,000-employee nuclear design/construction company. 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. Start-up of Brunswick Nuclear Project; Shearon Harris Project inspector.
- Designer/Draftsman, LE. Wooten Consulting Engineers. Designed HVAC, piping, and civil work for utility and industrial clients. Performed onsite inspections for verification to design.

EDUCATION: A.S. Civil Engineering, Wake College
Additional coursework: Mechanical Engineering, N.C. State University, Metallurgy/Welding, Illinois State University
Technical Qualifications: Level III per ANSI N45.2.6.
American Welding Society Certified Welding Inspector (CWI) Registration #84070131

OTHER: U.S. Representative for International Atomic Energy Agency (IAEA) Symposium on Worldwide Nuclear Quality Programs.
Consultant in development of DOE 5700.6C, Quality Assurance.

NAME: Olga Jones

AREA OF RESP: Coordinator

ASSOCIATION: Lawrence Livermore National Laboratory
University of California

EXPERIENCE: 35 years

- Lawrence Livermore National Laboratory, Staff Member, Directors Office
 - Site coordinator assistant for the DOE Tiger Team assessment, Lawrence Berkeley 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," 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 publication section, implemented a word processing system/center, coordinated foreign travel, conferences, visits, 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 - 1978

NAME: Dorothy A. Kerr

AREA OF RESP: Report Coordinator

ASSOCIATION: Princeton Area Office, Department of Energy Field Office, Chicago

EXPERIENCE: 34 years

- U.S. Department of Energy (also U.S. ERDA and U.S. AEC)
 - Princeton Area Office. Secretary to Area Manager, responsible for day-to-day interaction of the office staff, travel arrangements, voucher preparation, typing, filing, answering routine correspondence and telephone calls, scheduling meetings, estimating and preparation of office travel budget.
 - Tiger Team, Princeton Plasma Physics Laboratory, Princeton, NJ. Liaison and interface with laboratory for logistics, planning, scheduling, and final report preparation.
 - Tiger Team Report Coordinator, Oak Ridge National Laboratory, Oak Ridge, TN.
 - Administrative Assistant to Tiger Team Leader and Management Subteam, Lawrence Livermore National Laboratory, Livermore, CA. Responsible for weekly status report, hotline calls, telephone, mail, xeroxing, typing: table of contents, preface, introduction, executive summary, management and miscellaneous sections of report.
 - Administrative Assistant to Tiger Team Leader and Management Subteam, Paducah Gaseous Diffusion Plant, Paducah, KY. Responsible for weekly status report, hotline calls, telephone, mail, typing: table of contents, preface, introduction, management and miscellaneous sections of report.
- AEC, New Brunswick Laboratory. Clerk typist.
- Secretary for a real estate and insurance company.

EDUCATION: Various secretarial, travel, supervisory and administrative courses

NAME: Donald J. Perrotti

AREA OF RESP: Radiological Protection

ASSOCIATION: Evergreen Innovations, Inc.

EXPERIENCE: 30 years

- Technical Consultant to DOE's Office of Health Physics and Industrial Hygiene
- Emergency Preparedness Consultant
- U.S. Nuclear Regulatory Commission Emergency Preparedness Specialist
- Health Physics Instructor, Turkey Point Plant
- U.S. Army Non-commissioned Officer
- Health Physics Supervisor
- PM-3A Naval Nuclear Power Plant crew member
- Health Physics Technician
- Explosive Ordnance Disposal Specialist

EDUCATION: A.A., New York State Regents
U.S. Nuclear Regulatory Commission: PWR Technology and BWR Technology
National Emergency Training Center courses in Radiological Emergency Response Operations, Planning for Nuclear Emergencies, Evacuation Planning and Response Actions Simulation, and Advanced Management of Radiation Accidents
U.S. Public Health Service courses in Basic Radiological Health, Radionuclide Analysis by Gamma Spectroscopy, Environmental Radiation Surveillance, Analysis of Radionuclides in Water, Occupational Radiation Protection, Chemical Analysis for Water Quality, Statistical Methods - Quality Control in the Laboratory, Operational Aspects of Radiation Surveillance, and Reactor Hazards Evaluation
U.S. Army: Nuclear Power Plant Operations Course and Special Nuclear Weapons Disposal

OTHER: Member National Health Physics Society/Baltimore Washington Chapter
Member American Nuclear Society

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, and the Hanford site.
- Participated in the Graphite and Confinement review of the N- Reactor
- Served on the National Institute of Standards and Technology Reactor Safety Review Committee
- Conducted 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 Reactor Operations Division of American Nuclear Society

NAME: Janis G. Ramey

AREA OF RESP: Technical Editor

ASSOCIATION: Viking Systems International - Private Consultant

EXPERIENCE: 29 years

- Free-lance technical writer for 21 years: Clients include large and small companies in a variety of technical fields including, among others, nuclear engineering, waste management, 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 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
- 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: Senior Member, Office Holder, Society for Technical Communication
Award of Excellence, 1990-91 and 1988-89 Publications Competitions, Society for Technical Communication

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

NAME: Robert W. Tayloe, Jr.

AREAS OF RESP: Training and Certification and Security/Safety Interface

ASSOCIATION: Battelle

EXPERIENCE: 12 Years

- Battelle, Senior Research Scientist
 - Criticality Safety and Training
 - Radiation Safety
 - Dosimetry
 - Participated in six security Inspections and Evaluations of DOE Facilities
 - Participated in ten previous Technical Safety Appraisals
 - Participated in Operational Readiness Review Assessments for Office of Nuclear Safety
- Portsmouth Gaseous Diffusion Plant, Nuclear Criticality Safety Staff
 - Member of Nuclear Safety Committees
 - Conducted audits, training, analysis, interface with operations and engineering, instrumentation and resolution of inventory differences
 - Developed emergency drills, participated in Emergency Management Exercises, Member of Emergency Preparedness Committee

EDUCATION: Completed course work toward M.S., Nuclear Engineering, Ohio State University,
B.S., Nuclear Engineering, North Carolina State University

OTHER: Lectured on "Safety in Handling UF₆," 1983-1985 for DOE Office of Nuclear Safety seminar on Prevention of Significant Nuclear Events Professional Engineer, State of Ohio
Member of American Nuclear Society, American Society of Mechanical Engineers, Tau Beta Pi, and Alpha Nu Sigma

NAME: George E. Weldon

AREA OF RESP: Fire Protection

ASSOCIATION: Private Consultant

EXPERIENCE: 39 years

- Factory Mutual Research Corporation, Norwood Mass
 - Served on Technical Safety Appraisals for FFTF, N Reactor, Savannah River Plant Production Reactors, Livermore Plutonium and Tritium Plants, Idaho Chemical Processing Plant and Plutonium Finishing Plant, Sandia Albuquerque, Allied Signal Kansas City, Mound Laboratories, Livermore National Laboratories, and Sandia Livermore
 - Manager of Special Hazards Section
 - Engineering Specialist, Special Hazards. Responsible for fire and explosion hazards connected with major industrial occupancies, chemical and nuclear facilities
 - MAERP Reinsurance Association Engineering Manager for approximately the past 17 years.
 - Chairman of NFPA Atomic Energy Committee for about 12 years and member since its inception.

EDUCATION: B.S., Chemistry with minors in Physics and Mathematics, Northeastern University

OTHER: Registered Professional Engineer (Fire Protection), Massachusetts
Member of Society of Fire Protection Engineers Member of American Institute of Chemical Engineers
Member of National Fire Protection Engineers

NAME: Glenn A. Whan

AREA OF RESP: Nuclear Criticality Safety and Site/Facility Safety Review

ASSOCIATION: Oak Ridge Associated Universities-Private Consultant

EXPERIENCE: 34 years

- Participated in DOE Technical Safety Appraisals from 1986 to 1991 for Oak Ridge Y-12 Plant, Portsmouth and Paducah Gaseous Diffusion Plants, Idaho Chemical Processing Plant, Hanford Plutonium Finishing Plant and PUREX Plant, Rocky Flats Plant, West Valley Facility, Savannah River Site, Brookhaven National Laboratory, Sandia National Laboratory-Livermore, Argonne National Laboratory-East, Oak Ridge National Laboratory, and Princeton Plasma Physics Laboratory.
- Professor of Chemical and Nuclear Engineering, University of New Mexico, 1957 to 1985, including 11 years as Department Chairman and three years as Associate Dean of Engineering; nuclear reactor licensing and operation; Co-60 irradiation cell design, licensing, and operation; nuclear criticality safety education and training
- International Atomic Energy Agency Technical Expert, Reactor Experimentation, 1966 to 1967
- Los Alamos National Laboratory: High Temperature Gas-Cooled Reactor Safety Analysis, 1974 to 1975; Nondestructive assay measurements for special nuclear material, International Safeguards, 1983 to 1990
- Nuclear Safety Reviews, 1980 to 1991 Member and Chairman (for one year), DOE Independent Review Committee for Transuranic Waste; Member, Nuclear Regulatory Commission Nuclear Criticality Safety Appraisal Teams; Member, DOE Readiness Review Teams and SAR Reviews

EDUCATION: Ph.D., Chemical Engineering, Carnegie Mellon University
M.S., Chemical Engineering, Montana State University
B.S., Chemical Engineering, Indiana Institute of Technology

OTHER: Fellow of American Nuclear Society Professional Engineer, Nuclear Engineering, New Mexico

APPENDIX A-3-3

**BIOGRAPHICAL SKETCHES of SAFETY AND HEALTH SUBTEAM MEMBERS
TIGER TEAM ASSESSMENT
IDAHO NATIONAL ENGINEERING LABORATORY
SELECTED CONTRACTORS**

NAME: Albert D. Morrongiello

AREA OF RESP: TSA Team No. 3 Leader

ASSOCIATION: Office of Safety Appraisals, Headquarters, Department of Energy

EXPERIENCE: 21 years

- U.S. Department of Energy, Germantown, MD
 - Team Leader/Assistant Team Leader in Safety Inspection Division: Participated in 10 Technical Safety Appraisals associated with Tiger Team Appraisals
- U.S. Nuclear Regulatory Commission
 - Resident Inspector at Quad Cities Power Station
 - Participated on Inspection Teams at various sites
 - Manned Emergency Operations Center (EOC) phone station
- U.S. Environmental Protection Agency
 - Health Physicist
 - Conducted radium surveys in New York City
 - Responded to public inquiries
- Rutgers University
 - Research Assistant, Departments of Zoology and Radiation Science
 - Performed assays
 - Managed animal colony
- Virginia Institute for Scientific Research
 - Conducted chemical assays of environmental water samples

EDUCATION:

- M.S., Professional Management, Florida Institute of Technology
- M.S., Biology, University of Richmond
- B.A., Chemistry, University of Rhode Island
- Additional studies at Rutgers University - Department of Radiation Science
- ROTC - Army Reserve
- NRC - Boiling Water Reactor School, Pressurized Water Reactor School, Technical Writing, Pre-Supervisory Training

NAME: J. Kenneth Anderson

AREA OF RESP: Technical Support and Site/Facility Safety Review

ASSOCIATION: Private Consultant

EXPERIENCE: 40 years

- Hanford
 - Manager, Safety Assessment Office, Westinghouse Hanford
 - Manager, Nuclear Safety, Westinghouse Hanford
 - Executive Secretary and Member, Westinghouse Hanford Safeguards (Nuclear Facility Safety Review) Council
 - Classification Officer, Westinghouse Hanford
 - Nuclear facility (reactor and nonreactor) design analysis, operations analysis, and safety analysis
 - Six years experience with experimental and analytical heat transfer and hydraulics
- U.S. Department of Energy (contractor employee/ consultant)
 - Participated in 10 Technical Safety Appraisals

EDUCATION: B.A., Physics, University of Utah
Graduate courses in physics, mathematics, and reactor design analysis, University of Idaho

NAME: Mark E. Baldwin

AREA OF RESP: Technical Editor

ASSOCIATION: Oak Ridge National Laboratory

EXPERIENCE: 19 years

- Oak Ridge National Laboratory
 - Radiation and Industrial Safety Officer: ES&H Compliance (ES&HC), Waste Management and Remedial Actions (WM&RA), and Operations organizations
 - Member, ORNL ES&H Upgrade Team
 - Derivative Classifier for Tiger Team Assessment of ORNL
 - Procedure Review Officer and Derivative Classifier for ES&HC and WM&RA organizations
 - Staff Engineer
 - Nonreactor Nuclear Facility Training Coordinator for Operations Division
 - Senior Engineering Technician: Research and development of nuclear fuel recycling dissolution systems
- Consultant to U.S. Nuclear Regulatory Commission
 - Certified Examiner for the Operator Licensing Branch, Division of Human Factors Safety: Responsible for preparing and administering written, oral, and simulator examinations for Reactor Operator (RO) and Senior Reactor Operator (SRO) candidates at commercial PWR power plants
- U.S. Navy
 - Reactor and Propulsion Plant Supervisor: Responsible for operation, maintenance, and supervision of a naval nuclear propulsion plant (including experience with initial core loading and subsequent start-up testing)
 - Member, Operational Readiness and Safeguards Examination (ORSE) Preparation Team

EDUCATION: U.S. Navy Nuclear Power Program

Oak Ridge Associated Universities - Health Physics

U.S. Nuclear Regulatory Commission - PWR Technology

Numerous courses in areas such as OSHA 1910 and 1926,

SARA/OSHA, NFPA Life Safety Code, Nuclear Criticality

Safety, DOE Facility Safety Analysis Reports, DOE

Operational Readiness Reviews, and DOE Transportation

Regulations and Safety

NAME: Rita A. Bieri

AREA OF RESP: Report Coordinator

ASSOCIATION: Los Alamos National Laboratory

EXPERIENCE: 25 years

- Department of Energy (Contractor Employee- Los Alamos National Laboratory)
 - Report Coordinator for Technical Safety Appraisals: Brookhaven National Laboratory, Rocky Flats Plant (four appraisals), Hanford (Fast Flux Test Facility), and Los Alamos National Laboratory.
 - Report Coordinator for Tiger Team Assessments: Lawrence Livermore National Laboratory, Energy Technology Engineering Center, and Idaho National Engineering Laboratory.
- Los Alamos National Laboratory, Los Alamos, NM
 - ES&H Coordinator, ES&H Regulatory Office, Plutonium Facility: Responsible for ES&H Policy; Audits, Appraisals, Inspections, and Assessments; Followup Reporting; Tracking and Action Response; Accident/Incident Reporting; and Personnel Security Assurance Program.
 - Human Resources Representative, Plutonium Facility: Responsible for hiring, recruitment, Special Programs (UGS, GRAs, Summer Student, Post-Doctoral, Affiliates, and Consultants), Human Resources Development Program, Administrative policy interpretation and employee counseling.
 - Administrative Staff Assistant, Employment Specialist, Office Manager.
- Los Alamos County
 - Utilities Administration, Utilities Services Specialist; Los Alamos Schools, business administration and purchasing/contract specialist.
- Espanola Municipal School System
 - Personnel Contracts, Certification, and Renewals.

EDUCATION: Midwest Business College, Colorado State College, Pueblo, Colorado.

Numerous management, training, and human resource courses.

NAME: James A. Buckham

AREA OF RESP: Operations and Maintenance

ASSOCIATION: Private Consultant (JAB Inc.)

EXPERIENCE: 38 years

- Consultant to U.S. Department of Energy
 - Team member on Technical Safety Appraisals at Feed Materials Production Center, Y-12 Plant, Rocky Flats Plant, West Valley Demonstration Project, Portsmouth Gaseous Diffusion Plant, Savannah River Laboratory, Brookhaven National Laboratory, and Oak Ridge National Laboratory
- Consultant to PLG, Inc.
 - Oversight Team Leader to assure safe, effective restart of the Sequoyah Facility UF₆ Plant
- Allied-General Nuclear Services
 - Executive Vice President and President with overall responsibilities for the Barnwell Nuclear Fuels Plant
- Idaho National Engineering Laboratory
 - Research and Development, Operations, and Management at the Idaho Chemical Processing Plant

EDUCATION: Ph.D., Chemical Engineering, University of Washington
M.S., Chemical Engineering, University of Washington
B.S., Chemical Engineering, University of Washington

OTHER: Fellow Member, American Institute of Chemical Engineers
Member, Tau Beta Pi
Member, Sigma Xi
Member, American Nuclear Society
Member, American Chemical Society
Instructor, University of Washington
Adjunct Professor, University of Idaho

NAME: James A. Cox

AREA OF RESP: Auxiliary Systems

ASSOCIATION: Private Consultant

EXPERIENCE: 45 years

- Consultant
 - Provide 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, 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 the X-10 Graphite Reactor; also responsible for Hot Cell Operations (20 cells), Waste Operations (low- and intermediate-level 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: Scott L. Davis

AREA OF RESP: Emergency Preparedness

ASSOCIATION: Department of Energy Field Office, Oak Ridge

EXPERIENCE: 12 years

- U.S. Department of Energy Field Office, Oak Ridge
 - Program Manager, Emergency Management, Office of Assistant Manager for Defense Programs
- U.S. Army, Fort Monmouth, N. J.
 - Radiation Protection Officer
- LeBonheur Childrens Medical Center
 - Assistant Chief Technologist

EDUCATION: M.P.H., Public Health, University of Tennessee,
Knoxville
B.S., Radiology, University of Tennessee, Memphis

NAME: Richard Handler

AREA OF RESP: Fire Protection

ASSOCIATION: Private Consultant

EXPERIENCE: 40 years

- Consultant
 - Technical Safety Appraisal participant at Y-12
 - Tiger Team participant at the Hanford Facility
 - Pre-Tiger Team Assessment at K-25
 - Reviewed the Graphite Reactor (N Reactor) at the Hanford Site after the Chernobyl Reactor incident
 - Fire protection engineering consultant services to DOE, Savannah River Operations Office
 - Prepared fire protection data for computer Program IV, Paducah Gaseous Diffusion Plant and Portsmouth Gaseous Diffusion Plant
- U.S. Department of Energy, Oak Ridge Operations
 - Chief of the Industrial Safety and Fire Protection Branch: Responsible for administering and providing professional engineering support for the Industrial Safety and Fire Protection programs
- U.S. Army, Ordnance Corps, U.S. Army Materials Command, and Office, Chief of Engineers
 - Chief Fire Protection Engineer: Responsible for providing fire protection advice and program direction for approximately 100 U.S. Army installations
- U.S. Department of the Navy, Third Naval District
 - Fire Protection Engineer: Responsible for evaluating 20 major U.S. Naval installations and for providing fire protection regulations
- Factory Mutual Engineering Division, Philadelphia Field Office
 - Fire Protection Engineer: Provided improved-risk evaluations and engineering services to major corporations

EDUCATION: B.S., Civil Engineering, University of Maryland
Three-fourths completion M.S., Engineering Management, George Washington University

OTHER: Professional Engineer Registration, Maryland
Member, Society of Fire Protection Engineers

NAME: Robert M. Jefferson

AREA OF RESP: Packaging and Transportation

ASSOCIATION: Private Consultant

EXPERIENCE: 37 years

- Consultant
 - Provided pre- and post-TSA assistance to DOE Contractors
 - Provided technical expertise on transportation of radioactive and other hazardous materials with emphasis upon the DOE Orders and regulations, their interpretation, application, and compliance; the preparation and evaluation of safety analyses for packagings; determination of the impacts of regulatory change; and the development and evaluation of emergency response techniques and capabilities
- Sandia National Laboratories
 - Manager, Nuclear Materials Transportation Technology Department (Transportation Technology Center)
 - Manager, Nuclear Fuel Cycle Technology Department
 - Supervisor, Waste Management and Transportation Division
 - Supervisor, Radiation Applications Division
 - Supervisor, Research Support Section
- University of New Mexico
 - Adjunct Professor of Nuclear Engineering
- United States Air Force
 - Nuclear Physics Instructor

EDUCATION: M.B.A., University of New Mexico
B.S., Mechanical Engineering, Michigan Technological University

OTHER: Member, American Nuclear Society
Member, Sandia Reactor Safety Advisory Committee
Chairman, University of New Mexico Reactor Safety Committee

NAME: Robert D. Jones

AREA OF RESP: Aviation Safety

ASSOCIATION: Office of Quality and Safety, Headquarters, Department of Energy

EXPERIENCE: 7 years

- U.S. Department of Energy, Washington, D.C.
 - Aviation Safety Specialist, Office of Quality and Safety
 - Representative, Interagency Committee on Aviation Policy
- U.S. Navy
 - Lieutenant, USN
 - Winged Naval Aviator
 - Helicopter Anti-Submarine Squadron One
 - Helicopter Anti-Submarine Wing One
- U.S. Air Force
 - Equipment Specialist, TF-30 Technical Services
 - F-111 Depot Level Maintenance Team
 - Areas of expertise: Afterburner, combustion chamber, and fuel control

EDUCATION: M.B.A., Management Specialty, Oklahoma City University
B.S., Engineering Technology, Oklahoma State University
Additional courses: Federal Aviation Administration Academy, Transportation Safety Institute, Embry Riddle Aeronautical University, and EG&G

OTHER: Federal Aviation Administration licenses for commercial pilot, fixed wing, instrument rating; and commercial pilot, rotary wing, instrument rating

NAME: Thomas M. McCoig

AREA OF RESP: Firearms Safety

ASSOCIATION: Martin Marietta Energy Systems, Inc.

EXPERIENCE: 16 years

- Martin Marietta Energy Systems, Inc.
 - Manage the safety program for the Safeguards and Security Central Training Facility at Oak Ridge, TN.
 - Team member on firearms safety appraisal teams at Savannah River Plant, Lawrence Livermore Laboratory, Allied Signal Corporation Kansas City, Portsmouth Gaseous Diffusion Plant, Paducah Gaseous Diffusion Plant, and Strategic Petroleum Reserve Operations
 - Coordinate and assist with firearms safety related matters at Martin Marietta Energy Systems sites in Oak Ridge
 - Four years Special Response Team experience
 - Four years involvement with interpretation and implementation of the DOE firearms safety order
- U.S. Air Force
 - Six years security police experience

EDUCATION: Completed courses at Roane State and Walter State community colleges; completed various safety training courses at Martin Marietta Energy Systems, Inc.

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 and U.S. Nuclear Regulatory Commission in the fields of training, emergency preparedness, operations, and maintenance
- Team member, Technical Safety Appraisal at the Hanford Site

- U.S. Navy

- Inspector, Pacific Fleet Type Commanders Mobile Training Team
- ComNavSurPac/ComNavAirPac Representative, 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
Concord High School, Concord, Massachusetts

NAME: Leo H. Munson

AREA OF RESP: Radiological Protection

ASSOCIATION: Battelle Pacific Northwest Laboratory

EXPERIENCE: 37 years

- Battelle Pacific Northwest Laboratory
 - Development of Project Management and Health Physics programs
 - Evaluation and assessment of programs, equipment, systems, and criteria
 - Development of upgrade programs and corrective actions in the fields of Health Physics and Radiation Protection
 - Participated in numerous Technical Safety Appraisals and health physics program reviews
 - Participated as chairman and/or contributor to three of the DOE health physics manuals of good practice
- UNC Nuclear Industries, Richland, Washington
 - Manager of Reactor Quality Assurance at a dual-purpose reactor
 - Responsible for implementation of the company's industrial safety program, and overview of the radiological safety program
- Donald W. Douglas Laboratories
 - Primarily responsible for Health Physics in the Radioisotope Laboratory including dosimetry, waste handling, shipping, and radiological control

EDUCATION: A.A., Radiation Technology, Columbia Basin College, Pasco, Washington
Additional course work at Joint Center for Graduate Study, Richland, Washington

OTHER: Certified by the American Board of Health Physics in 1970, and recertified in 1981, 1984, and 1989

NAME: Linda F. Munson

AREA OF RESP: Security/Safety Interface and Personnel Protection

ASSOCIATION: Evergreen Innovations, Inc.

EXPERIENCE: 17 years

- Evergreen Innovations, Inc., President
 - Project Manager to assist EPRI in preparation of a radwaste desk reference
 - Consultant to Battelle Memorial Institute on cleanup of Three Mile Island (TMI)
 - Tiger Team and Technical Safety Appraisal participant in the areas of Industrial Hygiene, Security/Safety Interface, Emergency Preparedness, and Radiological Protection
- Battelle, Pacific Northwest Laboratories
 - Associate Section Manager, Dosimetry Technology Section
 - Project Manager, various technical assistance programs including cleanup of TMI and upgrade of the RMI Health Physics program
 - Participated in the team appraisal of six uranium mills with the U.S. Nuclear Regulatory Commission
 - Participated as an Observer for six emergency preparedness exercises for the U.S. Nuclear Regulatory Commission
- UNC Nuclear Industries
 - Manager, Industrial Safety: Responsible for industrial safety, industrial hygiene, and fire protection at the N-Reactor and associated fuel fabrication facilities
 - Managed the preparation of Environmental Information Reports and license applications for various nuclear facilities (primarily uranium mills and fuel fabrication plants)
 - Evaluated decontamination alternatives for the West Valley Reprocessing Plant

EDUCATION: M.S., Analytical Chemistry, Iowa State University
B.A., Chemistry, United States International University
Short courses in Radiation Protection, Industrial Hygiene, Industrial Safety, MORT, Respiratory Protection, Management, and Communication

NAME: Raymond Panciera, Jr.

AREA OF RESP: Radiological Protection

ASSOCIATION: General Dynamics Services Company

EXPERIENCE: 29 years

- General Dynamics Services Company, Reactor Plant Service
 - Completed an assessment of a radiation protection program at a nuclear power station
 - Completed an eight month assignment assisting the Radiation Protection Operations Manager at a nuclear weapons site
 - Participated in a Tiger Team Assessment of a multi-mission DOE site
 - Participated in the development of a radiation protection requirement manual and upgrade/preparation of implementing procedures at a U.S. Department of Energy facility and several power reactor sites
 - Prepared a laboratory counting manual for a U.S. Department of Energy facility
 - Held the following positions at various power reactor sites: Acting Radiation Protection Manager, Deputy Radiation Protection Manager, Radiation Protection Engineer, Senior Group Supervisor, Internal Reviewer and Assessor, and Radiological Engineer
- General Dynamics, Electric Boat Division
 - Radiation Protection Supervisor during construction, overhaul, refueling, and reactor modification

EDUCATION: Mitchell College - 2 years

NAME: Robert L. Peterson

AREA OF RESP: Quality Verification

ASSOCIATION: Viking Systems International

EXPERIENCE: 31 years

- Consultant to U.S. Department of Energy
 - Team member, Technical Safety Appraisal at Sandia National Laboratory
- General Electric Company
 - Manager, Operational Surety
 - Manager, Compliance Programs
 - Manager, Quality Control and Consulting
 - Manager, Quality Control Operations
 - Manager, Productivity Engineering
 - Manager, Quality Assurance
 - Manager, Process Control Engineering

EDUCATION: B.S., Industrial Engineering, University of Florida, Gainesville, Florida.
Graduate - G.E. 3 year Manufacturing Training Program (MTP) - now referred to as Management Training Program

OTHER: Professional Engineers License
Certified Quality Engineer
Certified General Contractor
Senior Member, American Society for Quality Control

NAME: Andrew J. Pressesky

AREA OF RESP: Organization and Administration

ASSOCIATION: Private Consultant

EXPERIENCE: 44 years

- Consultant to U.S. Department of Energy
 - Technical Safety Appraisals at Y-12, HFBR (BNL), EBR-II (ANL), ATR (EG&G), Strategic Petroleum Reserve, Lawrence Livermore National Laboratory, and the Morgantown Energy Technology Center
 - Design reviews for N-Reactor, HFIR, and SRP
 - Management review of ORNL, followup of Y-12 and ATR appraisals, quality Verification Inspections at ORNL and ANL-W
- Consultant to Architect Engineer
 - Review of nuclear quality assurance program at company headquarters and at three commercial reactors under construction
- Consultant and staff assistant to the American Nuclear Society Committee on the Source Term
- U.S. Department of Energy
 - Director, Office of Quality Assurance, Safety and Safeguards, Office of Assistant Secretary for Nuclear Energy
- Milletron Inc.
 - Vice President, Engineering
- Westinghouse Electric Corporation
 - Manager, Scientific Support, Westinghouse Testing Reactor
- Isotope Products, Ltd.
 - Technical Director
- National Research Council of Canada
 - Manager, Critical Experiments Program

EDUCATION: B.E., Engineering Physics, University of Saskatchewan, Canada

NAME: Reuben P. Prichard

AREA OF RESP: Aviation Safety

ASSOCIATION: RPX, Incorporated

EXPERIENCE: 45 years

- RPX, Inc., McLean, Virginia
 - Director: Provide consultation services for aerospace safety and management, aviation systems, operations, systems and engineering analysis, explosives and hazardous materials transportation and packaging, and training and motivational programs
- U.S. Department of Energy, Washington, D.C.
 - Director, Safety Engineering and Analysis Division: Responsible for safety analysis and direct oversight of the Nuclear Safety, Fire Protection, Quality Assurance, and Aviation Safety divisions
- National Aeronautics and Space Administration (NASA), Washington, D.C.
 - Director of Safety and Environmental Health, Assistant Director of Safety and Aviation, and Chief, Flight Crew Operations: Responsible for astronaut training and readiness; planning, management, and overview of aspects of Mercury, Gemini, Apollo, Skylab, and Space Shuttle programs; and overall NASA safety and environmental health policy and overview
- U.S. Navy
 - Naval Aviator and Test Pilot
 - Director, U.S. Naval Test Pilot School

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

OTHER: DOE Distinguished Career Service Award for Safety,
Leader and Member, multiple ES&H appraisals at
DOE and NASA
FAA Commercial Pilot and Flight Instructor
Professional Engineer, Engineering and Safety
Member, AIAA, ISASI, System Safety Society, Society
of Experimental Test Pilots, Helicopter Association
International, and National Aeronautic Association

NAME: Nancy L. Sanderson

AREA OF RESP: Report Coordinator

ASSOCIATION: EG&G Rocky Flats, Inc.

EXPERIENCE: 23 years

- Department of Energy (contractor employee)
 - Report Coordinator for Tiger Team Assessments at the 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: James D. Snodgrass

AREA OF RESP: Firearms Safety

ASSOCIATION: Martin Marietta Energy Systems, Inc.

EXPERIENCE: 20 years

- Martin Marietta Energy Systems, Inc.; Piketon, OH.
 - Commander, Protective Force Training Section: Establish priorities, goals, and policies for Training activities; perform administrative activities associated with short and long term training goals; direct training instructors and training relief Security Inspector; supervise and coordinate training activities for Protective Force Members to assure complete compliance with DOE orders.
- Operations Captain:
 - Special Assignment. Conducted investigations of unusual occurrences related to Security matters; coordinated clearance information with DOE and conducted pre-employment investigations/ interviews; supervised and directed Protective Force Officers; and assisted in the formulation and implementation of Special Response Teams.
 - Shift Sergeant and Security Inspector
- Pike County Sheriff Department, Pike County, OH.
 - Chief Deputy Sheriff

EDUCATION: George Washington University (CEU 2.16)
National Crime Prevention Institute (CEU 4.0)
Ohio State Highway Patrol Academy
Ohio Peace Officer Training Academy
Waverly High School, Waverly, OH

OTHER: Certified Rangemaster
Certified Instructor

APPENDIX A-3-4

**BIOGRAPHICAL SKETCHES of SAFETY AND HEALTH SUBTEAM MEMBERS
TIGER TEAM ASSESSMENT
IDAHO NATIONAL ENGINEERING LABORATORY
WORKER SAFETY**

NAME: Joseph A. Hopkins, Jr.

AREA OF RESP: TSA Team No. 4 Leader

ASSOCIATION: Office of Safety Appraisals, Headquarters, Department of Energy

EXPERIENCE: 17 years

- Department of Energy, Germantown, MD
 - TSA Team Leader, two TSA Teams
 - Occupational Safety Engineer, participant in Tiger Team and functional appraisals
- Occupational Safety and Health Administration, Department of Labor
 - Mechanical Engineer/National Technical Expert: Responsible for the enforcement of OSHA standards in unprecedented cases of national interest
- U.S. Environmental Protection Agency
 - Environmental engineer: Responsible for providing technical support for the enforcement of regulations promulgated under the Clean Air Act
- Bethlehem Steel Corporation
 - Mechanical Engineer: Responsible for developmental engineering of production equipment for a fully integrated steel mill, including prototype equipment for controlling environmental and workplace exposures to toxic substances

EDUCATION: B.S., Mechanical Engineering, University of Maryland

OTHER: Member, American Society of Mechanical Engineers

NAME: Melvin E. Cassady

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

ASSOCIATION: National BioSystems, Inc.

EXPERIENCE: 25 years

- National BioSystems, Inc.
 - Testimony in toxic tort litigation and expert on engineering controls
 - OSHA-type health and safety inspections
- Occupational Safety and Health Administration (OSHA) Health Response Team - Director
 - Assessment of complex industrial hygiene problems
 - Engineering control assessment
 - Program evaluation/development
 - Emergency response to health catastrophes
- National Institute for Occupational Safety and Health (NIOSH)
 - Industrial hygiene field investigations
 - Engineering control assessments
- Kennecott Copper Corporation
 - Developed industrial hygiene program
 - Conducted industrial hygiene field surveys
 - Reviewed engineering controls
- National Lead Company of Ohio (Fernald)
 - Monitored decontamination activities (reviewed personnel activities and checked levels afterward)
 - Managed water monitoring program
 - Conducted plant surveys

EDUCATION: M.S., Industrial Hygiene, University of Cincinnati
B.S., Biology/Minor Chemistry, Ft. Lewis college, Colorado

OTHER: Certified Industrial Hygienist
Clinical Faculty, University of Utah
Advisory Board, University of Utah

NAME: Scott C. Cassady

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

ASSOCIATION: National Biosystems, Inc.

EXPERIENCE: 4 years

- Health and Safety Technician
 - Perform health and safety inspections at selected Department of Energy research and production facilities. Identify, classify, and report all occupational safety and health violations, provide interpretation of Federal regulatory agency standards, and conduct routine industrial hygiene activities.
- American Express Travel Related Services
 - Computer Operator III: Maintained data host system for local and remote station users. Maintained proper allocation of resources for timely execution of production/test jobs; monitored and controlled system activity, job flow, applications, system/network resources, and user access.
- U.S. Department of Labor/OSHA Area Offices
 - Assistant Database Manager: Developed database covering OSHA standards and reports for use by Federal offices nationwide. Provided for database access through multiple database programs and utilities including OLIVE, Dbase III, VAX/VMS, BASIS, and UNIX. Assisted in development of equipment inventory control system.
- Personal Software/LJ Software
 - Consultant/Program Designer: Designed, tested, and debugged computer applications related to scheduling, medical services, and educational services. Performed various documenting tasks including help sheets ready references, and complete program documentation packages.

EDUCATION: B.S., Computer Science/Electrical Engineering, Villanova University (In progress)
B.S., Astrophysics/Astronomy, Villanova University (In progress)

NAME: David M. Drury

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

ASSOCIATION: Private Consultant

EXPERIENCE: 7 years

- Private Consultant
 - Participant in Technical Safety Appraisal (TSA) Tiger Team Assessments
- Monterey Coal Company (subsidiary of Exxon, USA)
 - Training Specialist: Coordinate and document training requirements; individualized assessments for training.
 - Safety Inspector: Loss control system, Computer Loss Control Surveillance System, MSHA inspections and worker safety audits; emergency preparedness system.
- Exxon USA
 - Field Safety Coordinator: Valdez oil spill-conducted state and federal OSHA inspections of all facilities; worker safety and equipment audits.
- Monterey Coal Company (MCC)
 - Safety Specialist: Analyzed MCC accident statistics, maintained MSHA CFR 30 updates, maintained Illinois Right-To-Know law requirements, and MSDSs.
 - Health and Safety Technician: Maintained all health monitoring equipment, conducted air quality and noise sampling, fire protection audits, self-rescuer audits.

EDUCATION: A.D., Mining Technology, Wabash Valley College
B.S., Industrial Technology, Southern Illinois University, Carbondale, Illinois

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: Ron D. Eimer, CIH

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

ASSOCIATION: Sandia National Laboratories

EXPERIENCE: 16 years

- Sandia National Laboratories, Albuquerque, NM
 - Senior Member of Technical Staff, involved in the full-time practice of industrial hygiene within the regulatory Assessments Division.
- BCM Engineers, Dallas, TX
 - Section Manager, provided oversight for a major asbestos abatement project.
- Gulf States Utilities, Beaumont, TX
 - Supervisor, Occupational Health and Safety, developed and managed an industrial hygiene/occupational health program at a major electric utility.
- U.S. Department of Labor (OSHA), Birmingham, AL
 - Supervisory Industrial Hygienist and field industrial hygiene compliance officer

EDUCATION: M.S., Environmental Health, East Tennessee State University
B.S., Chemistry, University of Alabama

OTHER: Diplomate, American Academy of Industrial Hygiene
(Comprehensive Practice) CP 1884

NAME: Richard H. Hayes

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

ASSOCIATION: Hayes Environmental Services, Inc.

EXPERIENCE: 20 years

- Hayes Environmental Services, Inc.
 - OSHA Safety and Health Inspections and Audits
 - Accident Investigations and Fault Tree Analysis
 - S.A.R.A. Title III Phase I Environmental Audits
 - Expert Witness in High and Low Voltage Electrical, Machine Guarding, Construction, and Hazardous Machinery Operations
 - Firearms Safety and Range Operations
 - Accredited OSHA instructor For competent Person, and OSHA Required Certification
- Occupational Safety and Health Administration
 - Responsible for carrying out the enforcement goals, policies, and inspection requirements mandated by the Occupational Safety and Health Act of 1970
 - Supervised and directed safety and health staff for compliance enforcement activities, Conducted sensitive and complex investigations of facilities targeted for inspections due to high injury rates
 - Managed and coordinated special emphasis programs for various high hazard industries and acted as team leader in these areas
 - Conducted, reviewed, and or participated in excess of 13,000 inspections of private sector facilities

EDUCATION: Attended Tiffin University, majored in Criminal Justice
Numerous college level courses for Safety and Industrial Hygiene

OTHER: Member, American Society of Safety Engineers
Member, Recombinant DNA Bio-Safety Committee, Medical College of Ohio
Member, National Safety Council
Member, National Asbestos Council
Member, Ohio Asbestos Council

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

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: Roy L. Kreuger

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

ASSOCIATION: Allied-Signal Aerospace Company Kansas City Division

EXPERIENCE: 13 years

- Allied-Signal Aerospace Company
 - Industrial Hygienist: Responsible for implementation of Hazard Communication Program, development of Industrial Hygiene chemical Exposure Monitoring Program, oversight of an Asbestos Abatement and Inspection program, development of Industrial Hygiene Procedures, conduct risk and safety evaluations of production, maintenance and engineering laboratory facilities and activities. Involved with computerized Hazardous Materials Information and inventory Systems handling Material Safety Data sheets, SARA reporting and RCRA compliance.
- Midwest research Institute
 - Industrial Hygienist: Responsible for coordinating field surveys, project logistics and sampling schedules involving employee exposure monitoring under NIOSH contracts.
- Stewart Industrial Hygiene and Safety
 - Industrial Hygienist: Responsible for conducting OSHA type inspections under the OSHA (Missouri) State Consultation Program. Conducted Field surveys at small and moderate sized industries.

EDUCATION: M.S., Industrial Hygiene, Central Missouri State University
B.S., Sanitary Science, Central Missouri State University
A.S., Biology Longview Community College

OTHER: Certified Industrial Hygienist
Certified Safety Professional
Certified Hazard Control Manager

NAME: Earl A. Maxie

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

ASSOCIATION: Portsmouth Enriching Office, Department of Energy Field Office, Oak Ridge

EXPERIENCE: 38 years

- Portsmouth Enriching Office DOE Field Office, Oak Ridge
 - Safety and Health Manager: Oversight and support of GOCO GDP safety, Industrial Hygiene, Health Physic, Fire Protection, Criticality and Facility Safety, Transportation and Firearms Safety, conduct Appraisals, Inspections and Self-Assessment Reviews, Certified Accident Investigator, Manager of the overall Safety and Health Program for the site.
- Safety and Health Division, Oak Ridge Operations Office, Department of Energy
 - In charge of ORO OSHA Program: Conducting unannounced OSHA type Inspections, provided training and consultation on OSHA standards and procedures; chairman of the ORO Firearms Safety Committee; conducted firearms appraisals of all ORO site for Firearms Safety. Investigated all incidents with firearms or related equipment. Member, Firearms Safety Committee.
- Safety and Health Manager, Portsmouth GCEP
 - Oversight of the construction of the GCEP project: For ES&H and Fire Protection.
- Occupational Safety and Health Administration (OSHA) Safety Supervisor, Acting Area Director
 - Conduct investigations of accidents, and employee complaints. Perform inspections of all industry sites, (construction and maritime). Manage office and supervise staff.
- The Timken Company
 - Safety Director

EDUCATION: A.S., Industrial Management

OTHER: Member, American Society of Safety Engineers

NAME: William R. Murphy

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

ASSOCIATION: Murphy & Associates

EXPERIENCE: 22 years

- Lurgi Corporation
 - Director of Safety: Responsible for corporate and field operations safety programs
- Exxon
 - Senior Safety Engineer (Special Assignment): Responsible to the President for all matters pertaining to safety, health and environment.
 - Safety Engineer: Site safety responsibilities responsible for all research/laboratory/pilot plant and construction projects.
 - Safety Engineer (ESSO, Venezuela): Monitored, inspected and implemented project safety/health fire protection.
- Private Consultant
 - Safety and health audits for major corporations
 - Training of safety and health inspectors
 - Compliance guidance to federal, state and local government
 - Expert witness...construction, aviation and worker safety and health
 - Interpretation of OSHA regulations for Department of Labor, Environmental Protection Agency, and Department of Energy

EDUCATION: B.S., Safety Engineering/Management, Embry-Riddle University

OTHER: Executive Secretary, National Safety Council
Member, Systems Safety Society
Member, American Society of Safety Engineers

NAME: Leonard J. Owens

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

ASSOCIATION: Department of Energy Field Office, Nevada

EXPERIENCE: 19 years

- DOE Field Office, Nevada
 - Safety Engineer, Safety and Health Division; Mining/General Engineer, Commercial Nuclear Waste Program; Contractor Engineer, Waste Isolation Pilot Plant
- International Minerals and Chemicals, Bokum Resources Mining Co., Gulf Mineral Resources, Utah International, American Smelting and Refining
 - Various positions as Chief Engineer/Superintendent and Mining Engineer
- Southwestern Radiological Health Laboratories, Public Health Service
 - Research Technician

EDUCATION: B.S., Mining Engineering, University of Nevada

OTHER: OSHA Training for Other Federal Agencies
DOE Accident Investigation MORT Training
MSHA Safety Training

NAME: Karen G. Rawlings

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

ASSOCIATION: National BioSystems, Inc.

EXPERIENCE: 3 years

- National BioSystems, Inc.
 - Industrial Hygiene Sampling Specialist
 - Safety Inspections Specialist
 - OSHA Standards Specialist and research appropriate OSHA standard violations
 - Developed OSHA-modified 1Bs and report forms/format
 - Participant in Oak Ridge National Laboratory, Lawrence Berkeley Laboratory, Sandia National Laboratories-Albuquerque, and Idaho National Engineering Laboratory Tiger Team Technical Safety Appraisals.
- Campbell Communications, Inc.
 - Responsibilities included research analysis of market survey data and development of final reports

EDUCATION: Coursework in Management, Montgomery College, Germantown, Maryland

NAME: Jacqueline D. Rogers

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

ASSOCIATION: Office of Health Physics and Industrial Hygiene Programs
Headquarters, Department of Energy

EXPERIENCE: 15 years

- U.S. Department of Energy, Germantown, MD
 - Industrial Hygienist: Responsible for developing DOE health and safety policy
 - OSHA type safety and health inspections for Technical Safety Appraisals (TSAs).
- Occupational Safety and health Administration (OSHA), U.S. Department of Labor, Washington, D.C.
 - Directorate of compliance Programs, Office of Health compliance Assistance. Senior Level Industrial hygienist. Responsible for developing compliance guidance documents for OSHA field staff for a wide range of health enforcement issues.
 - Directorate of Field Operations. Industrial Hygienist. Project Coordinator for the OSHA Industrial Hygiene Technical Manual
 - Directorate of Technical support. Industrial Hygienist responsible for assisting in the development of chapters for the OSHA Field Operation Manual. Accompany senior level industrial hygienist on official OSHA compliance inspections.

EDUCATION: M.S., Physiology, University of Connecticut
B.S., Biology, Federal City College

NAME: Michael F. Teresinski

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

ASSOCIATION: Office of Energy Research, Headquarters, Department of Energy

EXPERIENCE: 18 years

- U.S. Department of Energy, Washington, DC
 - Environmental, Safety & Health Engineer for Basic energy Sciences. Responsible for EPA, OSHA, and Tiger Team corrective action plans.
- U.S. Department of Labor, National Office
 - Office of Construction and Maritime Standards. Designated Agency Official for Shipyard Employment Standards Advisory Committee
 - U.S. Department of Labor, Region 2 Senior Safety Engineer/Investigator for special programs (Foundry, Construction, Explosives and Accident Investigation)
 - Instructor at OSHA Training Institute for Crane & Material Handling

EDUCATION: B.S., Mechanical Engineer/Nuclear Option Marquette University, WI
M.S., Environmental Engineer, New Jersey Institute of Technology

OTHER: Licensed Professional Engineer, New Jersey and California
Licensed Electrical Contractor, New Jersey
National Distillers & Chemical Co., Plant Engineering and Maintenance

APPENDIX A-4

**BIOGRAPHICAL SKETCHES of MANAGEMENT SUBTEAM MEMBERS
TIGER TEAM ASSESSMENT
IDAHO NATIONAL ENGINEERING LABORATORY**

NAME: Roger K. Heusser

AREA OF RESP: Management Subteam Leader

ASSOCIATION: Office of Classification, Department of Energy Field Office, Headquarters

EXPERIENCE: 28 years

- Currently Deputy Director, Office of Classification, Security Affairs
- Deputy Director, Office of Classification, and Technology Policy, Defense Programs
 - Classification
 - Export Control
 - Technology Transfer
- Operational and Management Assessment Subteam leader at Rocky Flats Plant
- Chaired DOE Waste Minimization and Avoidance Plan
- Prepared report on DOE management of plutonium residue recovery
- Senior Strategic Planning Advisor to Assistant Secretary for Defense Programs
- Senior DOE representative to Chernobyl negotiations
- Director, Division of Waste Management Research and Development
- Director, Division of Materials Processing
- Assistant Professor of Management Science, Frostburg State College
- Instructor of Chemistry, Oregon State University and Columbia Basin College
- Chemist, General Electric Co.

EDUCATION: M.B.A., Frostburg State College, Summa Cum Laude
M.S., Chemistry, Oregon State University
B.S., Chemistry, Linfield College

OTHER: Member, American Chemical Society
Member, Society of Sigma Xi
DOE Exceptional Service Award, 1988

NAME: Lawrence E. Biddle

AREA OF RESP: Management Subteam

ASSOCIATION: Contracts and Procurement Division, Department of Energy Field Office, Albuquerque

EXPERIENCE: 21 years

- Currently Procurement Analyst, CPD, AL
- Contract Specialist and Contracting Officer, Savannah River Operations Office
- Supervisory Contract Administrator, Sunflower Army Ammunition Plant, DeSoto, KS
- Contract Specialist, US Army GOCO Division, AMCCOM, Rock Island, IL
- Supervisory Contract Specialist, Grafenwoehr, Germany US Army Procurement Agency, Europe; Contracting Officer
- Contract Negotiator/Contract Specialist, US Army, White Sands Missile Range, NM
- Procurement Assistant, US Army, ARMCOM, Rock Island, IL
- Counterintelligence Agent, US Army

EDUCATION: B.A., Political Science, Westminster College

OTHER: Recipient of Federal Government superior performance awards

NAME: Jay D. Bilyeu

AREA OF RESP: Management Subteam

ASSOCIATION: Office of Planning, Department of Energy Field Office, Savannah River

EXPERIENCE: 22 years

- Currently Director, Office of Planning, Savannah River Field Office (SR)
- Acting Director, Operations and Materials Div. (SR)
- Chief, Planning Branch (SR)
- Nuclear Engineer, Ractor and Materials Branch (SR)
- Reactor Engineer, Reactor and Materials Branch (SR)

EDUCATION: M.S., Applied Nuclear Science, Georgia Tech
B.S., Physics, Georgia Tech

OTHER: Member, American Nuclear Society

NAME: Frank E. Bingham

AREA OF RESP: Management Subteam

ASSOCIATION: Reynolds Electrical and Engineering Company

EXPERIENCE: 31 years

- Reynolds Electrical and Engineering Co.
 - Consultant to DOE on Environmental Compliance.
 - Waste Minimization Coordinator for implementation of the Nevada Test Site (NTS) Waste Minimization Plan.
 - Directing hazardous waste inventory of NTS.
- U.S. Department of Energy
 - Director, Environmental Protection Division: Managed Nevada Operations Office (NV) environmental compliance and environmental monitoring programs.
 - Chief, Environmental Compliance Branch: Responsible for ensuring NV programs complied with applicable environmental laws and regulations.
 - Environmental Specialist: Responsible for NV compliance with NEPA, Endangered Species Act and National Historic Preservation Act.
- Bureau of Land Management
 - Worked in New Mexico, Utah and Nevada in positions of Range Conservationist; Chief, Division of Operations; Chief, Division of Administration; and Chief, Division of Resource Management and Acting District Manager. Spent two years in Nigeria with BLM as a part of the United States foreign aid program. Was responsible for developing and instructing a two-year course in range management.

EDUCATION: B.S., Range Management, Utah State University

NAME: Robert M. Compton

AREA OF RESP: Management Subteam

ASSOCIATION: Nuclear Power Consultants, Inc.

EXPERIENCE: 22 years

- Private Consultant
 - DOE Tiger Team Assessments at Savannah River, Hanford, ETEC and METC.
 - Appraisals of construction programs, Safety System Functional Inspections (SSFIs), Motor Operated Valve problems, regulatory issues, etc. for nuclear utilities.
 - Numerous individual and team assessments and problem resolution assignments at nuclear utilities for the USNRC related to Safety System Quality Inspections (SSQEs), SSFIs, Safety System Outage and Modification Inspections (SSOMIs), Construction Appraisal Team (CAT) inspections, instrumentation, in-service-testing of pumps and valves, compensatory measures, restart readiness reviews, "problem plant" corrective actions, safety allegations, etc.
- U.S. Nuclear Regulatory Commission
 - Senior Engineer and Reactor Inspector in the areas of civil and mechanical construction, testing and modification, inspection and enforcement.
- Mare Island Naval Shipyard (DOD)
 - Nuclear Fluid Systems Engineer and Supervisory Nuclear Engineer for construction, repair and refueling of navy nuclear vessels.

EDUCATION: B.S., Civil Engineering, California State University at Chico

OTHER: Member, American Nuclear Society

Member, American Society for Quality Control

Member, American Society of Civil Engineers

Member, American Consulting Engineers Council

NAME: Andrew Eppelmann

AREA OF RESP: Management Subteam

ASSOCIATION: Office of Organization and Management Systems, Headquarters, Department of Energy

EXPERIENCE: 36 Years

- Currently Director of Organization and Management Support Staff
- Director of Management Systems Analysis Division
- Director of Manpower Resources Management Division
- Director of Manpower, DOT
- Chief, Management Systems, manned space flight, NASA

EDUCATION: MPA, Public Administration, Syracuse University
B.A., Political Science, Syracuse University

NAME: Ralph W. Gray

AREA OF RESP: Management Subteam

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

EXPERIENCE: 22 Years

- Director, Information Management Div., NV
- Director, Management Evaluation Div., NV
- Director, Office of Audit, NV
- Deputy Director of Finance, NV
- Chief, Contract, Finance and Analysis Br., NV
- Member, Management Subteam, Savannah River Tiger Team Assessment

EDUCATION: B.S., Accounting, Brigham Young University

OTHER: Member, AICPA
Member, Idaho Society of CPAs

NAME: Roger W. Griebe

AREA OF RESP: Management Subteam

ASSOCIATION: Organizational Analysis Corporation

EXPERIENCE: 26 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, 1983, Stanford University
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

EXPERIENCE: 12 years

- M. H. Chew and Associates
 - Report Coordinator for the Management Team Report of the Tiger Team Assessment at the Idaho National Engineering Laboratory.
 - Report Coordinator for the Safety and Health Subteam Reports of the Tiger Team Assessment at the Lawrence Berkeley Laboratory and 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 ICPP at INEL.
 - Manager, Information Processing Services, responsible for the management direction and operation of two centralized Information Processing Centers.

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

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

NAME: Marye Hefty

AREA OF RESP: Technical Editor, Management Subteam

ASSOCIATION: Pacific Northwest Laboratory

EXPERIENCE: 4 years

- Lead editor of the Tiger Team Report for the Feed Materials Production Center at Fernald, Ohio
- Lead editor of the Hanford Site Environmental Report
- Lead editor of the U.S. Department of Energy Research Annual Report (Part 2)
- Adjunct instructor of English at Columbia Basin College

EDUCATION: M.A., English, Eastern Washington University, 1987
B.S., Biology, Texas Woman's University, 1984

NAME: Donald M. Hernon

AREA OF RESP: Management Subteam

ASSOCIATION: Stone & Webster Engineering Corporation

EXPERIENCE: 32 Years

- Stone & Webster Engineering Corporation
 - Project Manager, Project Management Department
 - Project Manager, Phase I Technical Support Services, Building 771, DOE-Rocky Flats Plant. Review of existing work and development of detailed plan/schedule for remaining resumption related engineering effort.
 - Project Management Consultant, DOE-Rocky Flats Plant. Management/technical assistance to Deputy AGM. Managed Building 559 resumption activities.
 - Project Management Consultant, Lawrence Livermore National Laboratory. Management assistance to Special Isotope Separation Project.
 - Project Manager, Utilities Facility, foreign petrochemical plant. Managed detailed engineering and design effort.
 - Assistant Project Manager, Commanche Peak and Millstone Nuclear Power Stations during engineering, design, and construction phases.
- U.S. Navy
 - Reactor Officer, Nuclear Powered Aircraft Carrier.
 - Executive Officer, Nuclear Powered Cruiser.
 - Training Officer, Atlantic Fleet Nuclear Powered Surface Ships.
 - Division Officer, Naval Nuclear Power Training Unit, West Milton, NY.

EDUCATION: M.S., Operations Research, Naval Postgraduate School
B.S., U.S. Naval Academy, 1959

OTHER: Registered Professional Engineer (Mechanical) - Massachusetts
Member, Project Management Institute

NAME: Marvin J. Laster, Esq.

AREA OF RESP: Management Subteam

ASSOCIATION: Private Consultant

EXPERIENCE: 32 years

- Private consulting in environmental and safety law, management and organization.
 - Participated in Tiger Team Assessments of the Lawrence Livermore National Laboratory, the Paducah Gaseous Diffusion Plant, the Oak Ridge National Laboratory, the Lawrence Berkeley Laboratory, the Energy Technology Engineering Center, the Sandia National Laboratory, and the Idaho National Engineering Laboratory, as a member of the Management Assessment Subteam.
 - Participated in DOE Headquarters Task force to develop Management Performance Objectives and Criteria for use in Tiger Team Assessments.
- U.S. Government Service
 - U.S. Atomic Energy Commission, U.S. Energy
 - Research and Development Administration, U.S. Department of Energy, 1958-1989 - Office of General Counsel - Assistant Chief Counsel: Chicago Operations Office, Brookhaven Area Office, Princeton Area Office, New York Support Office, and Environmental Measurements. Laboratory; Member, Accident Investigation Boards; Participant in annual Laboratory institutional appraisal programs; Represented U.S. Government in litigation, claims, and disputes.

EDUCATION: LL.B., New York University School of Law
Princeton Fellow, Public and International Affairs,
Princeton University
B. A., Political Science, Brooklyn College

OTHER: Recipient, numerous Federal Government superior performance and other awards

NAME: Marlenia J. Murray

AREA OF RESP: Office Manager, Management Subteam

ASSOCIATION: Office of Planning, Department of Energy Field Office, Savannah River

EXPERIENCE: 10 years

- Department of Energy, Savannah River Field Office.
Secretary to The Director of Planning
- Paine College, Augusta, Georgia
Secretary to the President

EDUCATION: Diploma, Thomson High School, Thomson, Georgia
Diploma, Augusta Area Technical Institute
Attended Paine College, Augusta, Georgia

NAME: Louis A. Rancitelli

AREA OF RESP: Management Subteam

ASSOCIATION: Battelle, Energy Systems Group

EXPERIENCE: 24 years

- Battelle

- Participated in Tiger Team Assessments of the Lawrence Livermore National Laboratory, the Paducah Gaseous Diffusion Plant, the Lawrence Berkeley Laboratory, the Energy Technology Engineering Center and the Sandia National Laboratories as a member of the Management Subteams.
- Participated in Task Force for DOE-HQ to develop Management Performance Objectives and Criteria for use in Tiger Team management assessments. Managed the Battelle West Jefferson, Ohio, Nuclear Facility. Responsible for compliance with DOE and Nuclear Regulatory Commission (NRC) regulations related to nuclear materials storage, handling and transportation, waste characterization and disposal, criticality safety, and health physics.
- Conducted and managed programs related to the environmental impact of radionuclides resulting from commercial and defense reactor operations and nuclear weapons fallout.
- Conducted and managed programs to define the environmental impact of toxic trace metals resulting from fossil fuel combustion and industrial operations.
- Managed an NRC program to define the emission, transport, and deposition of radionuclides from a low-level radioactive waste site.

EDUCATION: Ph.D., Nuclear Science and Engineering, Cornell Univ.
B.S., Chemical Engineering, Drexel Inst. of Tech.,
Senior Executive Program, The Wharton School, Univ. of Penn.
School of Government, Harvard Univ.

NAME: Al Rizzo

AREA OF RESP: Management Subteam

ASSOCIATION: Private Consultant

EXPERIENCE: 40 years

- Assistant Manager for Operations, Richland Operations Office
- Assistant Manager for Energy Programs
- Assistant Manager, Facility and Laboratory Management
- Deputy Director, Fast Flux Test Facility Project Office
- Reactor Safety Engineer, AEC/DRL

EDUCATION: M.S. Nuclear Engineering, Catholic University
B.S., Mechanical Engineering, City College
Bettis Reactor Engineering School

OTHER: AEC Exceptional Service Award (Bronze Medal)

NAME: John V. (Jack) Robinson

AREA OF RESP: Management Subteam

ASSOCIATION: Private Consultant

EXPERIENCE: 36 years

- Private consultant associated with PNL
- Manager of Environmental Programs, PNL
- Program Manager/Director of Marketing, Ecology and Environment, Inc.
- Assistant to the President, Calspan Corp.
- Planning Director, New York State Atomic and Space Development Authority
- Assistant to Vice President of Research and Development, Bell Aerosystems Corp.

EDUCATION: Graduate, Harvard Business School Club of Buffalo, 1971
M.S., Nuclear Physics, Rensselaer Polytechnic Institute, Troy, NY, 1955
B.S., Physics, Canisius College, Buffalo, NY, 1952
Graduate, Oak Ridge School of Reactor Technology, Oak Ridge, TN 1958

OTHER: Patent Holder: "A High Intensity Point Light Source"
Listed in "American Men and Women in Science"
Elected life member, Canisius College Alumni Honor Society
Awarded Lawrence A. Bell Fellowship

NAME: John J. Schreiber

AREA OF RESP: Management Subteam

ASSOCIATION: Private Consultant

EXPERIENCE: 36 years

- U.S. Department of Energy

- Manager, Shippingport Station Decommissioning Project Office: Responsible for safe, cost-effective execution of the plan to D&D first commercial nuclear power plant and return site to owner for unrestricted use. Sr. DOE rep on Emergency Management Team.
- Division Director, Waste Management Division (RL): Responsible for all Hanford site Waste Management planning, budgeting and execution. Initiated Environmental Impact Statement and program for clean-up of reservation. Compiled "Policies & Procedures" for newly organized WM Division. Conducted safety appraisals besides Unusual Occurrence program and Operational Readiness reviews. Emergency Management Team member.
- Division Director, Waste Management Division (OR): Responsible for planning, budgeting and execution of national HLW Repository Program.
- Branch Chief, Waste Management & Transportation Branch (OR): Responsible for R&D and waste management programs at ORNL.
- Project Engineer and Reactor Engineer, Headquarters, Department of Energy.

- Westinghouse Electric Corp

- Supervisory Engineer, Engineering Mechanics Lab., Astronuclear Div.: Responsible for laboratory testing of components and sub-assemblies of NERVA nuclear engine.

- Rohm & Haas Co.

- Physicist, Organic Chemistry Lab: Responsible for determination of rheological properties of polymeric materials. Developed computer program in support of stress analysis of large plastic plates with various boundary conditions.

EDUCATION: M.S., Engineering Mechanics, Penn State University
A.B., Physics/Mathematics, Gettysburg College

NAME: David Schweller

AREA OF RESP: Management Subteam

ASSOCIATION: DBS Associates, Inc. - Private Consultant

EXPERIENCE: 36 Years

- 4 years President, DBS Associates, Inc.,
Private Consultants in organization, management,
safety and security.
- Participated in 23 previous Tiger Team/TSA's, 11 as a
member of the Management Subteam, including the first Tiger
Team.
- Member of the Assistant Sect. Environment, Health and
Safety Working Group to review the TSA program.
- Safety Advisor for DOE Security Inspection and Evaluation
Teams.
- Evaluator for FEMA Nuclear Utility Emergency Drills.
- 10 years - Manager and Contracting Officer, DOE, Brookhaven
Area Office, Upton, NY.
- 14 years - Director, Safety Division, DOE, Brookhaven Area
Office, Upton, NY.
- 1 year - Reactor Safety Specialist, AEC, Washington, DC.
- 2 years - Chief, Experimental Physics, Martin Nuclear
Division, Middle River, MD
Designed, built, and operated three zero powered
experimental reactor facilities.
- 5 years - Reactor Physicist, Combustion Engineering Nuclear
Division, Windsor, CT
Designed, built, and operated three zero powered
experimental reactor facilities.

EDUCATION: B.S., Engineering Physics, N.Y.U. College of Engineering

NAME: Dennis L. Wagner

AREA OF RESP: Management Subteam

ASSOCIATION: Stone & Webster Engineering Corporation

EXPERIENCE: 32 Years

- Stone & Webster Engineering Corporation
 - Project Manager, Project Management Department
 - Project Manager, General Support Service Contract, DOE-Richland Operations Office. Development and implementation of Site Management System for management of RL mission programs.
 - Training Project Manager, DOE-Rocky Flats Plant. Development and conduct of performance based training programs for general employees.
 - Assistant Training Manager, Fort Calhoun Station. Implementation of training management program for public utility nuclear power plant.
 - Manager, Management Systems Division. Development, implementation, and operation of Stone & Webster Integrated Management Systems on engineering, construction, and development projects.
 - Assistant Project Manager, Millstone Nuclear Power Station during engineering, design, and construction phases.
- U.S. Navy
 - Material Officer, Submarine Group, Yokosuka, Japan. Managed material readiness of deployed submarines in Western Pacific fleet.
 - Engineer Officer, Fast Attack Nuclear Submarine.
 - Training Officer, Naval Nuclear Power Training Unit, Idaho Falls.
 - Division Officer, Polaris Missile Nuclear Submarine.

EDUCATION: B.S., Physics, University of Kansas, 1965
B.A., Mathematics, University of Kansas, 1965

OTHER: Certified Project Management Professional, 1986
Certified Naval Nuclear Engineer Officer, 1971
Member, Project Management Institute

APPENDIX B

ENVIRONMENTAL ASSESSMENT PLAN for the DOE TIGER TEAM ASSESSMENT at the IDAHO NATIONAL ENGINEERING LABORATORY

Appendix B — Environmental Subteam Assessment Plan

APPENDIX C

**ENVIRONMENTAL SUBTEAM DAILY AGENDAS
DOE TIGER TEAM ASSESSMENT
IDAHO NATIONAL ENGINEERING LABORATORY**

Appendix C — Environmental Subteam Daily Agendas



Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1 June 17-22, 1991 Air Paul E. Flaherty	AM Orientation	AM OSHA Training	AM Meeting with DOE overall site coordinator for air pollution activities approximately 1 hour	AM Continue ICPP tour-view the fuel processing operations and gas handling process	AM Tour Bldg 601, Uranyl Nitrate Processing	AM ANL-W Training

	PM Orientation	PM OSHA Training Meeting with all contractors responsible for management of APC issues, EG&G, WINCO, Rockwell and ANL-W approximately 2-4 hour meeting	PM With C. Martel (radiation) meet with manager of environmental exposure monitoring for ICPP, approximately 1-2 hours	PM Tour NOx Pilot Plant	PM Tour NWCF	PM Document review
			 Commence tour (process or air permitting person to lead tour) approximately 2 hours, tour will commence with coal fired boiler operations			 Conduct review of requested materials

			 Continue ICPP tour		 Tour APS System	 Tour Utility Facilities

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1 June 17-22, 1991 Groundwater, Soil, Sediment, and Biota Jim Rice	AM Orientation PM Orientation	AM OSHA Training PM OSHA Training	AM Groundwater program review meeting PM Groundwater program review meeting continued	AM Observe drilling and sampling at ICPP with environmental restoration and/or sampling/monitoring managers PM LDU CPP-37 drilling and soil sampling Adam Owen 525-5498 PM Inspect ICPP, with environmental restoration and/or sampling/monitoring managers -Percolation Ponds -Injection wells -Flyash pit -Underground storage tanks -Monitoring wells -New waste calcining Facility (694) Process	AM Inspect CFA with environmental restoration and/or sampling/monitoring managers -Landfills -Asbestos Landfill -Monitoring wells -Underground tanks -Fire department training area -CFA drain system PM CFA Inspection continued -Motor pool "ponds" -Gravel pit -Haz. waste storage facility -BORAX trash dump	AM ANL Safety Training PM Review Documents Develop Findings

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1 June 17-22, 1991 Air Joseph C. Sabatini	AM Orientation PM Orientation	AM OSHA Training PM OSHA Training Meeting with all contractors responsible for management of APC issues, EG&G, WINCO, Rockwell and ANL-W approximately 2-4 hour meeting Meeting with DOE overall site coordinator for air pollution control (APC) activities approximately 1 hour	AM Tour CFA 690 with process or air person PM Meet Boiler Operator, EG&G Tour CFA with process or air person 688, 665, 609, 623, 664	AM SMC Training Tour CFA with process or air person 612, 625, 633 PM Observe SO ₂ Calibration @ 690 (E. Chew) Burn Brothers Batch Plant Interview personnel at 623, 624 DOE Fire Department Tour 688	AM Tour TRA with process or air person (coordinate with J. Lischinsky - rad issues) 604, 609, 610, 625, 627, 635, 636, 674, 710, 753, 770 PM Tour TRA with process or air person 623, 619, 633 ATR facility tour	Document review

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1 June 17-22, 1991						
Water Joe Fromal	AM Orientation	AM OSHA training	AM TAN - Interview, Document Collection - Wastewater, Stormwater, - with Env. Assessments and Permitting Personnel External inspection of conveyance systems, wastewater treatment with Technical Support personnel - 626, 333, 736, 750, 616, 623, 655, 666, 670, 711, 723, 781 782, 286, 643, 331, 737 PM Building and structure inspections with Technical Support - 625, 627, 624, 630, 650, 726, 745	AM SMC Safety Training-TAN- environmental coordinator Proc. Mgr.-SMC-606, 628, 607 648, 654, CFT-624, 629, 630, 631, 637, 650, TANT-24, TANT-25, 119, 333, 726, 736, 745, 750 PM Inspect TAN-IET-620, 625, 626, 627, 656 Building and structure inspections with Technical Support - 603, 607, 611, 633, 653, 662, 667, 680, 716, 640, 642, 646	AM Idaho Falls - Interview, Document Collection - Wastewater, Stormwater with Env. Assessments and Permitting Personnel; Sample Collection with Environmental Monitoring Personnel PM Building and Structure Inspections with Technical Support Personnel Interview Facility Mgr. IF-601, 602, 603, 605 PM Inspect Idaho Falls- IF-617, 631, 639	AM ANL-W Safety Training

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1 June 17-22, 1991						
Water Mike Bryant	AM Orientation	AM OSHA training	AM TAN - Interview, Document Collection - Water Systems, SPCC with Env. Assessment and Permitting Personnel; Inspect Potable and Firewater Systems, and ASTs with Technical Support Personnel - 632, 637, 639, 114, 119, 733, 748, 608, FO- T-138, DF-T-14, SCT-89, SCT-115, 608, 610, 612, 613, 649, 701, 702, 703	AM TAN - Interview, Document Collection - Water Systems, SPCC with Env. Assessment and Permitting Personnel; Inspect Potable and Firewater Systems, and ASTs with Technical Support Personnel - 207, 644, 728, 731, 735, 738, 739, 652, 620, 656, 629, 631, TANT-24, TANT-25, 602, 604, 609, 615	AM Idaho Falls- Interview, Document Collection-Water Systems, SPCC-with Env. Assessment and Permitting Personnel Inspect Potable and Firewater Systems, and ASTs with Technical Support Personnel Water Treat Mgr.-IF- 604, 606, 608	AM ANL-W Safety Training

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1 June 17-22, 1991 Groundwater, Soil, Sediment and Biota Andrew Smyth	AM Orientation	AM OSHA Training	AM Meet with Environmental restoration and/or sampling/monitoring managers to discuss ground water and soil contaminant investigations Groundwater Program Review Meeting with DOE, USGS, EG&G Idaho, WINCO, ANL-W, RESL	AM Inspect Test Area North with environmental restoration and/or sampling/monitoring managers -TSF Disposal Pond -TSF Gravel Pit -Loft Disposal Pond -TSF Int. Level Waste Disposal -Monitor Wells -TAN/TSF-1 Area TAN T10	AM Inspect Test Reactor Area with environmental restoration and/or sampling/monitoring managers -TRA-758 -TRA-712 -TRA-702 -Monitoring wells -Waste disposal wells PM TRA Inspection continued -TRA-731 -TRA-630 Red Tanks -TRA-613 Hot Waste Tanks -Underground Storage Tanks	AM ANL Safety Training PM Review Documents Develop Findings
	PM Orientation	PM OSHA Training	PM Groundwater Program Review (continued)	PM TAN Inspection continued -WRRTF Two Phase Pond -WRRTF Evaporation Pond -WRRTF Sewage Lagoon -Underground Storage Tanks -IET Hot Waste Tank -TAN 735		
				 Inspection Injection Wells (LOFT, TSF, WRRTF, IET, Inactive Sites)		

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1 June 17-22, 1991 Groundwater, Soil, Sediment, and Biota Jim Rice	AM Orientation	AM OSHA Training	AM Groundwater program review meeting	AM Observe drilling and sampling at ICPP with environmental restoration and/or sampling/monitoring managers PM LDU CPP-37 drilling and soil sampling Adam Owen 525-5498	AM Inspect CFA with environmental restoration and/or sampling/monitoring managers -Landfills -Asbestos Landfill -Monitoring wells -Underground tanks -Fire department training area -CFA drain system	AM ANL Safety Training

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1 June 17-22, 1991 Waste Management Tom Collins	AM Orientation PM Orientation	AM OSHA training PM OSHA training	AM EG&G overall program review with EG&G waste management staff Tour TRA facility with facility waste specialist PM Inspect TRA waste ponds and review status of permits with TRA waste specialist	AM Emergency drill PM Inspect TRA and tour S&T Laboratory with Dick Johnson	AM Meet with WINCO managers responsible for waste management activities PM Tour ICPP facility with S. Birrer and J. Edelman	AM Document review PM Prepare TRA findings

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1 June 17-22, 1991 Waste Management Kathleen Gaisler	AM Site Orientation PM Site Orientation	AM OSHA Training PM OSHA Training	AM CFA Meet with EG&G waste management staff to review overall program Interview person in charge of EG&G waste management records PM Review EG&G records	AM CFA Continue review EG&G waste management records PM Interview Environmental Coordinator for PTI and review PTI waste management records	AM CFA Interview persons in hazardous waste operations Review waste management records kept at hazardous Waste Operations PM Complete review of EG&G waste manifests	AM CFA Continue review of EG&G waste management records PM Continue review of EG&G waste management records

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1 June 17-22, 1991						
Waste Management Dick Hall	AM Orientation	AM OSHA training	AM EG&G Overall Program Review UST Identification	AM SMC Safety Training Meet with SMC Waste Management personnel to identify UST	AM CFA-Meet with Waste Management Remote Service Facility personnel Inspect haz waste storage condition, document, labels, training, permits Bldgs 601, 637, 639	AM ANL-W Training PM Prepare findings
	PM Orientation	PM OSHA trainig	PM TAN-Meet with Waste Management personnel Inspect IET Facility for residual or storage of haz/mixed waste	PM TAN-Meet with Waste Management Technical Support personnel Inspect TAN facilities for haz waste storage, haz waste management, medical waste, accumulation storage Bldgs. 603, 604, 607, 609, 615, 616, 636, 647, 649, 653, 660, 664, 667, 668	PM Inspect CFA-Remote Service Facility, labs & laundry, adm. & support, labs & dispensary, haz/mixed waste mgt., accumulation identification, medical waste Bldgs 602, 605, 608, 612, 614	

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1 June 17-22, 1991 Toxic & Chemical Materials Rosemary Goydan Benson	AM Orientation	AM OSHA Training	AM EG&G DOE ID Overview/orient of haz. chem. procurement, inventory, storage, and management -understands EG&G inter. with other contractors -discuss PCBs, pesticides, asbestos, AST monitoring programs	AM EG&G-CFA Review PCB management program Interview re: PCB inspection, storage, disposal notifications (W.A. Baxter 6-6472)	AM EG&G-CFA Interview re: outside contractors pesticide (D. Lainhart, 6-2491) Interview re: pesticides use, application procedures (T. Suniga)	AM Document review PM Document review

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1 June 17-22, 1991 Toxic & Chemical Materials Margaret Miller	AM Orientation PM Orientation	AM OSHA training PM OSHA training	AM EG&G and DOE ID Overview/orient of haz. chem. procurement, inventory, storage, and management -understand EG&G inter. with other contractors -discuss PCBs, pesticides, asbestos, AST monitoring programs PM Attended SARA meeting	AM Rockwell-SMC SMC safety training EG&G-PBF Review haz. chem. receipt, handling, storage-laboratory, petrol., acids, bases, comp. gas Review pest., asbestos management Interview re: pest. and chem. handling, storage, responsibilities of PBF personnel vs. CFA people PM EG&G-PBF Review PCB inventory and disposal records Interview re: PCB inspection, storage, disposal (person responsible for shipping to storage for disposal area) Inspect PCB-cont equipment, visit storage for disp. areas Tour facilities/ laboratories, storage areas (WERF metal processing, PBF-620, 625) Inspect for asbestos Interview re: AST monitoring Inspect ASTs	AM PTI Review haz. chem. purchasing, inventory, storage and management systems Interview re: TSCA, FIFRA, chem. storage, staff training (B. Brunson) PM PTI Interview re: AST monitoring programs Review visit chem. storage, ASTs, ordnance storage area Review training records	AM ANL-W ANL-W safety training Document review PM Document review
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

Environmental Team Daily Agenda

Week 1 June 17-22, 1991 Quality Assurance Hilton Rivera	AM	AM	AM	AM	AM	AM
	Orientation	OSHA Training	Meeting with Site Offices and Contractors QA Managers to discuss QA programs - DOE-ID - DOE-CH - EG&G - WINCO - ANL-W - Rockwell - RESL	EG&G QA program evaluation consisting of interviews with - QA representatives - Lab supervisors and document control personnel - Lab tours - Review of environmental monitoring - Programs and sampling and analytical procedures - Interviews (Jane Welch) Preston: QA Engineer, L. Peterson-Wright: Env. Monitoring	EG&G QA program interviews (continued) PM	ANL Safety Training Document Review PM

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1 June 17-22, 1991 Quality Assurance Paul Pifalo	AM Orientation PM Orientation	AM OSHA Training PM OSHA Training	AM Meeting with Site Offices and Contractors QA Managers to discuss QA programs - DOE-ID - DOE-CH - EG&G - WINCO - ANL-W - Rockwell - RESL PM QA programs evaluation (continued)	AM EG&G QA program evaluation consisting of interviews with - QA representatives: L. Kobeik, J. Welch - Lab supervisors and document control personnel - Lab tours - Review of environmental monitoring - Programs and sampling and analytical procedures - Interviews (Jane Welch) PM EG&G QA program evaluation (continued)	AM EG&G QA program interviews (continued) PM EG&G QA program interviews (continued)	AM ANL Safety Training PM Record update, develop findings

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1 June 17-22, 1991 Quality Assurance Joe Swiniarski	AM Orientation	AM OSHA Training	AM Meeting with Site Offices and Contractors QA Managers to discuss QA programs and oversight of operations - DOE-ID - DOE-CH - WINCO - ANL-W	AM DOE-ID QA program evaluation consisting of interviews with - QA Representatives - Evaluation EMP - QA program plans - QA project plans - Lab supervisors - Document control personnel - Programs sampling and analytical procedures - Interview (W.K. Leaks)	AM Sampling - Air sampling on the RWMC (if time permits) PM NOAA meteorological monitoring program	AM ANL Safety Training Document Review PM Findings Development PM

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1 June 17-22, 1991						
Radiation	AM	AM	AM	AM	AM	
Chris Martel	Orientation PM Orientation	OSHA Training PM OSHA Training	Meet with overseer of Sitewide Environmental Monitoring Program. <u>ICPP</u> Meet with coordinator of radiological environmental monitoring activities. Meet with supervisors responsible for the collection of media for radiological purposes.	Tour the Process Building (601) accompanied by the coordinator of radiological environmental monitoring activities and supervisor of each medium (i.e., air, water, soil, biota) and supervisors responsible for radio-active waste.	Tour the New Waste Calcining Facility (NWCF) (655,694) accompanied by the coordinator of radiological environmental monitoring activities and supervisor of each medium (i.e., air, water, soil, biota) and supervisors responsible for radioactive waste.	Sleep
				PM Continue tour of Process building.	PM Continue tour of the ICPP Inspect all stack air sampling points Review calibration of instrumentation	

Environmental Team Daily Agenda

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Week 1 June 17-22, 1991 Radiation Dave Allard	AM Orientation PM OSHA training	AM Site tour PM Site tour	AM Meet with overseers of Sitewide Environmental Monitoring Program. PM CFA; audit 617, the laundry facility with the coordinator of radiological monitoring	AM Continue CF-617 audit PM Tour 690 RESL accompanied by sampling coordinator and laboratory directors	AM CFA: conduct tours of 617, 669, 625 A&B, 633, 638, 657, 687, Sewage Plant PM Continue CFA tours	ANL-W Training Record Review

Environmental Team Daily Agenda

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	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1 June 17-22, 1991 Radiation Joe Lischinsky	AM Orientation PM Orientation	AM OSHA Training PM OSHA Training	AM Meet with overseer of Sitewide Environmental Monitoring Program. PM Discuss effluent release points with TRA Engineering staff	AM TRA Meet with coordinator of radiological environmental monitoring activities. Meet with supervisors responsible for the collection of media for radiological purposes. TRA/ETR/MTR Tours Tour areas with radiological environmental monitoring coordinator and sampler of each medium (air, water, soil, biota, lab waste, D&D).	AM <u>TRA/ATR/ATRC Tours</u> Tour TRA-670 PM Continue tour with Buildings 632, 635, 770, 704, 705 Tour Building 660 accompanied by the coordinator of radiological environmental monitoring activities and supervisors of each medium collected for ARMF and supervisor responsible for radioactive waste Continue tour with buildings of the CFRMF (661,668, 604) Observe air sampling at ATR	ANL-W Training Review TRA Records.

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1 June 17-22, 1991						
Inactive Waste Sites Stewart Young	AM Orientation PM Orientation	AM Safety Training PM Safety Training	AM Meet with DOE personnel responsible for environmental restoration: - DOE/EHS Oversight (G. Bowman Dir.) - DOE/ERWM (J. Solecki, Asst. Mgr.) - DOE/ERD (J. Lyle, Dir.) PM Meet with DOE personnel responsible for environmental restoration: - DOE/EPB (W. Sato, Chief) - DOE/Chicago (ER Manager) Coordinated meeting with Groundwater	AM Meet with L. Gren, DOE ER Meet with R. Smith, DOE ER PM Meet with S. Stiger, EG&G Meet with L. Butler, Buried Waste	AM Continue meetings with EG&G CERCLA personnel: EG&G/Compliance Assurance (V. Watson); Site Characterization (C. Watkins); Technical Support (M. Koll, Mgr.) PM Meet with B. Stiger Review ARDC	AM ANL-W Safety Training PM CERCLA Document Review PM Continue meetings with CERCLA personnel: EG&G/D&D Program (R. Meservey, Mgr.); Program review, WAGI Manager

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1 June 17-22, 1991						
Inactive Waste Sites Andrew O'Conor	AM Orientation PM Orientation	AM Safety training PM Safety training	AM Meet with DOE personnel responsible for environmental restoration: -DOE/ESH oversight (G. Bowman, Dir.) -DOE/ERWM (J. Stolecki, Asst. Mgr.) -DOE/ERD (J. Lyle, Dir.) PM Meet with DOE personnel responsible for environmental restoration: - DOE/EPB (W. Sato, Chief) - DOE/Chicago (ER Mgr.) Review SARA documents in the Tiger Team library	AM Meetings with SARA personnel: - SARA Operations Security (R. Green, Chief) PM Continue meetings with SARA personnel: - INEL/Fire Dept. (C. Moore, Chief) - LEPC (P. Doughty, Head)	AM Meet with SARA personnel: - TERC (W. Moore, Coord), will contact by phone next week - located in Boise, Idaho PM Continue meetings with SARA personnel: - MK Ferguson/ESH (B. Malone, Mgr.)	AM ANL-W Safety Training PM SARA Document Review

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1 June 17-22, 1991 NEPA John Pulliam	AM Orientation PM Orientation	AM OSHA Training PM OSHA Training	AM Interview T. Perkins, ID PM Review NEPA guidance	AM SMC training; review SMC actions on interview PM Review and coordination of NEPA activities	AM Review and coordination PM Review and coordination	AM NEPA Team Meeting** PM NEPA Team Meeting**
NEPA Hitesh Nigam	AM Orientation PM Orientation	AM OSHA Training PM OSHA Training	AM Attended waste management meeting PM Attended SARA meeting " Assign responsibilities for Findings; Draft Overview; Discuss Evidence for Findings; Preliminary Drafts of Findings	AM Interview T. Perkins, R. Twitchell, ID PM Interview W. Sato of ID	AM Interview M. Stewart & R. Tom, ANL-W 8:30 PM Interview D. Jensen, EG&G, 1:00, R. Bank, WINCO, 2:00 * Ground Truth selected ongoing projects re: NEPA determinations and documentations	AM NEPA Team Meeting** PM NEPA Team Meeting**

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1 June 17-22, 1991 NEPA Lorene Sigal Warren Webb	AM Orientation PM Orientation	AM OSHA Training PM OSHA Training	AM Interview - DOE-ID, (7:45) T. Perkins (Sigal & others) - ANL-W (Webb) R. Tom (8:30) G. Marshall PM Interview planning	AM Interview (Webb) - MK Ferguson (7:30) D. York G. Malone - Rockwell (8:00, Sigal) D. Janke D. Alexander - WINCO (10:00, Webb) G. Franz PM Interview D. Jansen, EG&G (Sigal)	AM Interview L. Witbeck, ANL-W (Webb); PM Interview D. Jansen, EG&G, B. Bocohan, M. Garvey, R. Lloyd, ID (Sigal) PM Interview D. Markam, T. Reynolds, NERP Coordinator (Webb);	AM NEPA Team Meeting** PM NEPA Team Meeting**
NEPA Cindy Heckman Tom England Joe Nixon	AM Orientation PM Orientation	AM OSHA Training PM OSHA Training	AM Review NEPA files Coordination ongoing/proposed projects with NEPA determination PM Review NEPA files Coordination ongoing/proposed projects with NEPA determination	AM Interview T. Perkins, ID (Heckman) PM Review and coordination of NEPA activities	AM Review and coordination* PM Review and coordination* PM *Ground Truth selected ongoing projects re: NEPA determinations and documentations	AM NEPA Team Meeting** PM NEPA Team Meeting**

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Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 2 June 24-29, 1991 Air Paul E. Flaherty	AM Tour ARA Meet with RWMC air pollution control permitting person Tour facility starting at subsurface disposal area (SDA) and compactor building (Process or air permitting person to lead tour) PM Tour the stored waste and examination pilot plant (SWEPP) building 610 Tour transuranic storage area (TSA) Conclude RWMC review	AM Attend ANL-W review meeting with radiation person (Joe Lichinsky), regarding air approximately 1-2 hours Toured main stack and monitoring equipment Toured TREAT facility PM Commence tour of ANL-W (process or air permitting person to lead tour) Toured EBR-II and facilities, utilities and power plants (and cooling towers) buildings 766 and 768, 757	AM Meet with plant services Tour gas cleanup operation building 795 Toured main stack and monitoring equipment Toured TREAT facility PM Tour building 286 emergency diesel generators and boilers Tour hot fuel examination facility Tour fuel cycle facility	AM Tour zero power physics reactor Met with TREAT program personnel Tour FMF Met with IH person to discuss asbestos issue. Met with O&L Facility Lab Manager Review of RWMIS submitted with waste management	AM Review meteorological monitoring system with NOAA personnel (meteorologist) PM Reviewed meteorological and dispersion modeling practices with NOAA personnel PM Tour RLWTF	Document review and finding development

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 2 June 24-29, 1991						
Air Joseph C. Sabatini	<p>AM</p> <p>Interview SMC air compliance and permit personnel</p> <p>Interview SMC operations and maintenance personnel (Mgr.)</p> <p>Tour SMC</p> <p>Tour 675, 679, 629, 681, 682</p> <p>Coordinate with D. Allard (radiation)</p> <p>Observe NO_x stack sample at 681</p> <p>PM</p> <p>Tour 607, Document Incinerator, 606</p>	<p>AM</p> <p>Interview PBF operations and maintenance personnel (Mgr.)</p> <p>Tour PBF-Reactor Area 620, 621, 624, 625, 629 with process or air person</p> <p>PM</p> <p>Tour PBF-WERF 609, 622, 755 756 with process or air person</p> <p>Tour PBF-WEDF 612</p>	<p>AM</p> <p>Interview TAN operations and maintenance personnel (Mgr.)</p> <p>Tour TAN-TSF 607, 666, 726, 734, 615, 633,</p> <p>Tour PREPP 667, 664, 603</p> <p>PM</p> <p>Tour TAN-WRRF 641, 646, 652 with process or air person</p> <p>Tour TAN-TSF 07, 630, 665, 633, 636, 687</p>	<p>AM</p> <p>Document review</p> <p>PM</p> <p>Interview EG&G Asbestos Abatement Coordinator</p> <p>Interview Energy Coordinator</p> <p>EG&G Fire Protection Group</p>	<p>AM</p> <p>Tour IF with air or operations person 602, 603, 609, 611, 613, 614, 615, 616</p> <p>IRC</p> <p>PM</p> <p>Tour IF 617, 627, 639, 710, 713</p> <p>WCB</p>	<p>AM</p> <p>Document review</p>

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 2 June 24-29, 1991 Water Joe Fromal	AM ANL-W-Interview: Document Collection Wastewater, Stormwater with Env. Assessments and Permitting Personnel External Inspection of Conveyance Systems, Wastewater Treatment with Technical Support Personnel-720, 721, 724, 704, 798, 799, 760, 778, Pond PM Building and Structure Inspections with Technical Support Personnel - 757, 766, 767, 768, 774, 777, 784, 792, 759, 772, 781, 782, 790, 769, 752A, 757A, 778A, 780	AM CFA-Interview: Document Collection Wastewater, Stormwater, with Env. Assessments and Permitting Personnel External Inspection of Conveyance Systems, Wastewater Treatment with Technical Support Personnel-633, 674, 691, 716, 717, 766 PM Building and Structure Inspections with Technical Support Personnel-601, 602, 603, 604, 609, 612, 614, 616, 623, 624, 625, 632, 645, 646, 650, 651	AM CFA-Building and Structure Inspections with Technical Support Personnel - 665, 666, 668, 669, 679, 682, 684, 685, 690 PM Building and Structure Inspections with Technical Support Personnel - 692, 695, 698, 699, 710, 711, 758, 769, 770, 774 Sample Collection with Environmental Monitoring Personnel	AM TRA Interview, Document Collection - Wastewater, Stormwater with Env. Assessments and Permitting Personnel PM External Inspection of Conveyance Systems, Wastewater Treatment with Technical Support Personnel-624, 630, 631, 632, 636, 671, 701, 702, 703, 704, 705, 732, 751, 755, 758, 760, 764 PM Building and Structure Inspections with Technical Support - 603, 604, 605, 607, 614, 616, 618, 620, 627, 628, 634, 635, 643, 644, 647, 648, 654, 657, 558, 660, 665, 666, 667, 668, 675, 676	AM Idaho Falls - Building and Structure Inspections with Technical Support Personnel PM Interview Facil. Mgr. IF-609, 611, 613, 614 PM Inspect Idaho Falls - IF-712, 713	AM Document review PM Document review

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<p>Week 2 June 24-29, 1991</p> <p>Water Mike Bryant</p>	<p>AM</p> <p>ANL-W- Interview, Document Collection - Water Systems, SPCC - with Env. Assessment and Permitting Personnel</p> <p>Inspect Potable and Firewater Systems, and ASTs with Technical Support Personnel - 707, 754, 742, 755, 756</p> <p>PM</p> <p>Building and Structure Inspections with Technical Support Personnel-787,788, 793, 765, 785, 701, 751, 752, 753, 789, T-1, T-12, T-13, T-15, 768A, 768B, 791</p>	<p>AM</p> <p>CFA - Interview, Document Collection - Water Systems, SPCC - with Env. Assessment and Permitting Personnel</p> <p>Inspect Potable and Firewater Systems, and ASTs with Technical Support Personnel-712, 719, 720, 753, 756, 708, 713, 724, 725, 726, 727, 728, 729, 730, 731, 732, 734, 736, 738</p> <p>PM</p> <p>Building and Structure Inspections with Technical Support Personnel-606, 605, 607, 608, 617, 619, 621, 622, 637, 640, 641, 642, 654, 657, 662, 664</p>	<p>AM</p> <p>CFA - Interview, Document Collection - Water Systems, SPCC - with Env. Assessment and Permitting Personnel</p> <p>Inspect Potable and Firewater Systems, and ASTs with Technical Support Personnel - 739, 740, 741, 743, 744, 746, 747, 748, 754, 757, 759</p> <p>PM</p> <p>Building and Structure Inspections with Technical Support Personnel - 671, 673, 675, 677, 686, 687, 688, 689, 760, 762, 763, 764</p>	<p>AM</p> <p>TRA - Interview, Document Collection - Water Systems, SPCC - with Env. Assessment and Permitting Personnel</p> <p>Inspect Potable and Firewater Systems, and ASTs with Technical Support Personnel - 601, 602, 619, 633, 645, 650, 672, 706, 708, 712, 719, 727, 731, 754, 763, 775</p> <p>PM</p> <p>Building and Structure Inspections with Technical Support Personnel - 608, 609, 612, 613, 621, 622, 625, 626, 638, 640, 641, 642, 649, 651, 652, 653, 661, 662, 663, 664, 669, 670, 673, 674</p>	<p>AM</p> <p>Idaho Falls - Interview, Document Collection - Water Systems, SPCC - with Env. Assessment and Permitting Personnel</p> <p>Interview Maint. Mgr.</p> <p>Inspect IF-610, 625, 627, 616</p> <p>PM</p> <p>Inspect Idaho Falls</p> <p>Inspect Early Bird Plaza</p> <p>Inspect Lords Facility</p>	<p>AM</p> <p>Document review</p> <p>PM</p> <p>Document review</p>

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 2 June 24-29, 1991 Groundwater, Soil, Sediment and Biota Andrew Smyth	AM Inspect Radioactive Waste Management Complex with environmental restoration and/or sampling/monitoring managers -Subsurface Disposal Area -Transuranic Storage Area PM RMMC Inspection continued -Monitoring Wells -Production Wells -A-D Spreading Areas	AM Inspect ANL-W with environmental restoration and/or sampling/monitoring managers -Industrial Waste Pond -TREAT Leach Field -RSWF -Dry Wells PM ANL-W Inspection continued -Underground Storage Tanks -Monitoring Wells	AM Inspect Other Areas with environmental restoration and/or sampling/monitoring managers -Naval Ordinance Disposal Area (NODA) -Liquid Corrosive Chemical Disposal Area (LCCDA) 2 percolation units PM Other Area Inspections continued -EOCR/OMRE Leach Pond	AM Review documents	AM Review documents	AM Review Documents PM Develop Findings

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 2 June 24-29, 1991 Groundwater, Soil, Sediment, and Biota Jim Rice	AM Inspect Power Burst Facility (PBF) with environmental restoration and/or sampling/monitoring managers -PBF - 733 -SPERT II, IV Leach Ponds -Reactor blowdown pits -Monitoring wells -Underground storage tanks PBF Inspection continued STR-13 Cont. Materials Area -SPERT IV-758 Pond -Waste Water Evap. Pond -Injection wells (2) PM Inspect Army Reactor Area (ARA) with environmental restoration and/or sampling/monitoring managers -Monitoring Wells -ARA - 745 -ARA - 740 -ARA - 729 -ARA - 719 -ARA - 744 ARA Inspection continued -Underground Storage Tanks	AM Meet with L. Mann, USGS, to discuss sampling program sitewide PM Review Documents	AM Interview EG&G staff: -Susan Stiger (Env. Restoration Prog. Mgr.) -R.H. Meservey (D&D Prog. Unit Mgr.) -L.C. Hull (COCA Mgt. Unit Mgr.) PM EG&G Interviews continued -W.H. Sullivan (WAG-7 Unit Mgr.) -LC Van Deusen (WAG-2 Unit Mgr.) -M.G. Koll (Tech. Support Unit Mgr.) Env. Monitoring	AM Interview WINCO staff: -Kenner Earle (Mgr. Env. Restoration and Assessments) -Dee Williamson (Mgr. Site Remediation) PM WINCO interviews continued -Len Hutterman (Lead Project Mgt.) -Review records	AM Interview USGS staff: -Program Mgr. -Project Leaders -Sampling/Monitoring Staff -Review records PM Interviews: RESL -Biota sampling -Scope of sampling Document review	AM Review Documents PM Develop Findings

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 2 June 24-29, 1991 Waste Management Tom Collins	AM Meet with R. Meservy on UST and L. Guinn on LDR issues PM Meet with Brenda Mikkola and Jane Welch or D. Litteer regarding the waste minimization program, inventory of waste and tracking of wastes	AM Meet with Don Rasch on Site Permits, IAG and COCA PM Meet with ICPP on permits, IAG, and COCA	AM Review/inspect filter storage areas at FAST and NWCF at ICPP with Steve Birrer. PM Review ASTs at ICPP PM Discuss waste characterization procedures for WINCO with Chris Kent	AM Review/inspect TAs and SAs with Laura Beseris PM Inspect percolation ponds with Steve Birrer at ICPP PM Discuss contamination/decommissioning program with Dennis Schmidt. PM Review tank from secondary containment with Liz Thiel at ICPP. PM Inspect the LDU-37 soil sampling at ICPP with John Williams.	AM Inspect ICPP UST with S. Birrer and Pam Cunningham PM Review waste minimization program for WINCO with John Edelmeyer PM Tour MK Ferguson construction site, meet with MK Ferguson waste specialist	AM Document review PM Prepare ICPP and TRA findings

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 2 June 24-29, 1991 Waste Management Kathleen Gaisler	AM ICPP Interview person(s) in charge of ICPP waste management records PM Begin review of ICPP waste management records PM Continue review of ICPP waste management records	AM ICPP Continue review of ICPP waste management records PM Complete review of ICPP waste management records	AM Interview person in charge of MK Ferguson waste management records PM Begin review of MK Ferguson waste management records PM Complete review of MK Ferguson waste management records	AM SMC Interview person in charge of SMC waste management records PM Begin review of SMC waste management records PM Complete review of SMC waste management records	AM AM-ANL-W Interview person in charge of ANL-W waste management records PM Begin review of ANL-W waste management records PM Continue review of ANL-W waste management records	AM Review documents PM Review documents

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 2 June 24-29, 1991 Waste Management Dick Hall	AM CFA-Meet with Waste Management Handling and Open Storage Service personnel Inspect shops and vehicle maintenance, Haz/mixed waste mgt., Accumulation, Buildings 621, 622, 623, 624, 640, 654, 664, 665, 666, 671 PM CFA-Meet with Waste Management Engr. & Light Lab Shops & Labs personnel Inspect Helicopter maintenance, Haz/mixed waste mgt., Accumulation, Bldgs. 608, 612, 625, 633, 686, 688, 689, 690, 698, 699	AM CFA-Meet with Waste Management personnel Inspect Landfill & Open Pit Solid waste management, permits, operations CFA-Meet with Waste Management and Warehouse personnel Prec. metals recovery Bldgs. 601, 687 PM TAN-Technical support facility -UST -Craft shops	AM Inspect SMC Bldgs. 606, 628, 648, 654, 658, 671, 672, 673, 674, 675, 676, 677, 681, 682, 683, 684, 686, 688 PM SMC (cont.)	AM TAN-Meet with Waste Management Containment Test & Water Reactor Research Test personnel Facilities Shops Inspect labs haz/mixed waste mgt., Accumulation, storage, Bldgs. 624, 669, Bldgs. 629, 640, 641, 645, 646 PM ANL-2 -Meet with waste management personnel -IST identification	AM ANL-W Inspect haz/mixed waste mgmt., Accumulation storage, Bldgs. 703, 704, 752, 753, 754, 765, 768, 7688, 769, 772, 774, 781, 782, 785, 787, 788, 791, 793, 794, 797, 798, 799 PM ANL-W (continued)	AM Prepare findings PM Prepare findings

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 2 June 24-29, 1991 Toxic & Chemical Materials Rosemary Goydan Benson	AM EG&G-TRA Inspect ASTs (fuel NaOH, sulf. acid) Tour chem. S&T laboratories, storage; coordinate with ADL Air Team. PM EG&G-TRA Interview re: pest. use/disposal procedures, training, (pesticide applicator) Visit storage areas (TRA-671, others) Interview re: chem. handling and storage processing asbestos Review PCBs program, inventory and storage for disp. records	AM EG&G-CFA Visit CF 637 Attend Environmental coordination meeting (CFA cafeteria) PM EG&G-TRA Tour chemical storage areas, pest. equipment areas (640, 653) Interview with D. Johnson (PCBs, asbestos, other pesticides use)	AM EG&G-RWMC Review chem. procure., inventory, storage, monitoring programs Review pesticide management and application records Walkthroughs	AM EG&G-TRA Tour chemical warehouse/ storage areas Review PCB records Further pest. use interviews PM EG&G-TRA/CFA Interview re: AST monitoring activities, training records	AM EG&G-IF Interview re: chemical exchange program Interview re: pesticides use at intown facilities PM EG&G-IF	Document review PM Document review

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 2 June 24-29, 1991 Toxic & Chemical Materials Margaret Miller	AM/PM WINCO-ICPP Observe chemical inventory update Review haz. chem. proc. inventory, storage procedures and records (C.E. Jones, R. Stuart) Interview re: chem. handling procedures	AM K. Coburn WINCO-ICPP Review pest. programs -purchase, applications, storage -training, contractors Interview re: pest. use procedures, training (pesticide applicator) Interview re: inventory, records (maintenance manager) Inspect ASTs PM WINCO-ICPP Interviews re: chemical inventory reporting (L. Beseris) anhydrous ammonia leakage problem	AM EG&G-TAN Review status of haz. chem. use, inventory, storage Interview re: chem. handling and storage procedures Review PCB inventory and disposal records Review pest. management program, applic. records PM EG&G-TAN Interview re: PCB inventory, storage and disposal procedures Interview re: AST monitoring proc. Walkthrough to inspect PCB items and storage, ASTs, pest. storage areas, bulk chem. storage (coordinate with ADL Air team) Meet with ADL IWS team regarding SMC/SARA	AM Rockwell-SMC Review haz. chem. proc. and management systems (including SARA) Interview re: chem. receipt, inventory storage, shipping from EG&G (D. Alexander, J. Durrent) Review PCB inventory, records, procedures (B. Anderson) PM Observe pest. applic. (sched. with A.M. Jensen) Rockwell-SMC Tour facilities/ laboratories, storage areas (TAN 675, 679, 681, others) coordinate with ADL Air team Inspect for asbestos, PCB items Inspect ASTs	AM WINCO-ICPP Review asbestos program Inspect Pilot Plants and their associated labs PM WINCO-ICPP Inspect boiler house Inspect facilities ASTs (fuel, bases, acids) Interview re: AST monitoring procedures, training	AM Revisits and rechecks Document review PM Document review

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 2 June 24-29, 1991 Quality Assurance Hilton Rivera	AM Evaluation of ERP Interviews -Compliance assurance Manager -IEDMS Manager -Manager of SMO	AM PM EG&G-CFA environmental lab QA program (continued)	AM EG&G QA program evaluation (continued) -IRC Lab tour (IF-601, 602, 603) -Interview (Lab Supervisor) (QA Representative)	AM ANL-W QA program evaluation consisting of interviews with -QA Representatives -Lab Supervisors -Document Control Personnel	AM WINCO QA Program Evaluation PM (cont.)	AM Document Review Findings Development PM QA Status Update with Other Disciplines

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 2 June 24-29, 1991 Quality Assurance Paul Pifalo	AM EG&G QA program evaluation (continued) -CFA -QA program evaluation -Interview (QA Representative) PM EG&G-CFA environmental lab QA program (continued)	AM EG&G QA meeting WERF PM EG&G-QA analysis	AM EG&G interview with J. Morrow PM Finding development	AM ANL-W QA program evaluation consisting of interviews with - QA Representatives - Document Control Personnel Review of environmental monitoring programs, sampling and analytical procedures - Interview (Gary C. Marshall, SES Manager) (Paul J. Wolf, QA Representative) PM ANL-W QA program evaluation (continued) Review of - QA program plans - QA project plans	AM WINCO QA evaluation PM WINCO program evaluation (continued)	AM/PM Document Review Findings Development

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 2 June 24-29, 1991 Quality Assurance Joe Swiniarski	AM RESL QA program evaluation PM RESL QA program evaluation (continued) -Interviews (Thomas F. Gesell, Director) -Lab tour -Review of EMP QA program plans QA project plans Sampling -MK-RESL (if time permits)	AM 30 minute to 1 hour with escort for rescheduling RESL QA program evaluation (continued) PM Interview (R. Douglas Carlson, QAB Chief) PM RESL QA program evaluation (continued) Interview (E.W. Chew, RSB Chief)	AM Rockwell QA program evaluation consisting of interviews with -QA Representatives -Interview (Tom Lewellan) QA Representative) PM Rockwell QA program evaluation (continued) Interview (E.W. Chew, RSB Chief)	AM Rockwell QA program evaluation (continued) -Interview with Lab supervisor Document control personnel -Interview (Louis Z. Bodnar, Lab Manager) PM Rockwell QA program evaluation (continued) Sampling	AM Sampling APHIDS SO ₂ RESL QA program evaluation consisting of interviews with - QA Representatives - Lab supervisors - Document control personnel PM SMC QA document review	AM Document Review Findings Development PM QA Status Update with Other Disciplines

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 2 June 24-29, 1991 Radiation Chris Martel						
	<p>AM <u>IRC</u> Review air sampling data</p> <p>PM <u>ICPP</u> Inspect RAL, old Waste Container; review air sampling data</p>	<p>AM Inspect Highland Waste Tank Farm at ICPP, liquid waste unloading station CPP-169, D+D operation at CPP-631.</p> <p>PM Observe stack air filter sample collection procedure.</p> <p>PM Inspect LOU-17, percolation ponds, site walk-over.</p>	<p>AM <u>RWMC</u> Meet with coordinator of radiological environmental monitoring activities of RWMC and supervisors for media collection for radiological purposes.</p> <p>PM Tour TSA beginning with SWEPP (MMF-612, 610, 615) accompanied by the coordinator of environmental monitoring activities and supervisors of radiological media collection.</p>	<p>AM Continue RWMC tour with Buildings 618, 711, 714 & 720 accompanied by the coordinator of radiological environmental monitoring activities and supervisors of radiological media collection.</p> <p>PM Continue tour</p>	<p>AM Review environmental sampling data for the RWMC at CFA</p> <p>PM Review the characterization of source terms for RWMC at EG&G</p>	<p>Tour of SL-1</p> <p>Inspect Sanitary Landfill</p>

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 2 June 24-29, 1991						
Radiation Dave Altard	AM SMC training, facility tour; meet with coordinator of radiological environmental monitoring activities PM Continue SMC audit and tour	AM SMC Audit environmental radiation program PM Continue SMC audit	AM PBF Meet with coordinator of radiological environmental monitoring activities of PBF PM Continue tour of WERF accompanied by coordinator of environmental monitoring activities and supervisor responsible for radiological media collection	AM PBF Continue audit of PBF Reactor PM Continue audit of PBF reactor and SPERT II and IV	AM TAN Meet with the coordinator of radiological monitoring activities of TAN Tour TAN PM CFA Followup landfill and contaminated equipment storage area <u>TAN</u> Audit LOFT, 607, sewage plant, IET area	AM Tour of SL-1 PM Record Review Finding Development

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 2 June 24-29, 1991 Radiation Joe Lischinsky	AM Review Radiation Measurements laboratory, plans, procedures analysis PM Meet with TRA Radiological Coordinator to review areas of calibration	AM <u>ANL-W</u> Meet with coordinator of radiological environmental monitoring activities of ANL-W. PM Meet with supervisors responsible for the collection of media for radiological purposes. PM Tour the TREAT Facility beginning with Building 720 accompanied by the coordinator of environmental monitoring activities and the supervisors of medium collection at TREAT. Begin with tours of EBR-II and the power plant (768) accompanied by coordinator of environmental monitoring activities and supervisor of each medium collected and those responsible for radioactive waste and D&D.	AM Continue tour of EBR-II accompanied by same individuals as Tuesday p.m., visiting Buildings 772, 795, and 752. PM Tour Building 785 of the HFEF accompanied by coordinator of environmental monitoring activities and supervisors of medium collection for the HFEF. PM Continue tour with Building 765 accompanied by coordinator of environmental monitoring activities and supervisors of medium collection for the HFEF.	AM Tour ZPPR and Buildings 774 and 777 with coordinator of environmental monitoring activities and supervisors of medium collection for ZPPR. PM Tour FMF and RLWTF Conduct tour of laboratory buildings and meet with supervisors of respective areas	AM Continue tour with coordinator of environmental monitoring activities and supervisors of medium collection and lab supervisors. PM Tour Buildings 752, 791, 703, 798, and 794. PM Meet with Waste Management Engineering Staff to review input to RMMIS data Review EWM activities and tour waste storage areas	Record Review Finding Development Tour of SL-1

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 2 June 24-29, 1991 Inactive Waste Sites Stewart Young	AM Program Review with COCA Manager, L. Hull Document Review	AM Program Review with ICPP Manager, WAG3 (K. Earle)	AM Program Review with PBF Manager, WAG5 (R. Hover) Document Review	AM Program Review with Manager, WAG6 (EBRI) and WAG 10 (misc) (L. Street)	AM Program Review with ANL Manager WAG9 (M. Holzemer) PM Program review with DOE/ER Manager (J. Lyle)	AM Meet with ADL Groundwater Team: Coordination and Review PM Document Review

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 2 June 24-29, 1991						
Inactive Waste Sites Andrew O'Conor	<p>AM</p> <p>Program Review with TAN SARA Contact - cancelled - will have to schedule</p> <p>Document Review - completed</p> <p>PM</p> <p>Program Review with SARA Contact TRA</p> <p>Document Review</p>	<p>AM</p> <p>Chris Kent, Laura Bascris 9:00 AM</p> <p>Program Review with ICPP SARA Contact</p> <p>Document Review</p> <p>PM</p> <p>Program Review with CFA SARA Contact</p> <p>Document Review</p> <p>Pat Walsh, et. al. 1:00-2:30 PM</p>	<p>AM</p> <p>Flint Belk 8:00 A.M.</p> <p>Program Review with PBF SARA Contact</p> <p>Document Review</p> <p>PM</p> <p>Meet with D. Alexander, Rockwell SARA Coordinator 1:00 PM</p> <p>Document review</p>	<p>AM</p> <p>Don Martin 8:00 A.M.</p> <p>Program Review DOE/RESL</p> <p>Document Review</p> <p>Program Review with RWMC SARA Contact (J. Garcia)</p> <p>Document Review 9:30</p> <p>PM</p> <p>Program review with TAN SARA contact</p> <p>Document review</p> <p>D. Kufin 1:00 P.M.</p>	<p>AM</p> <p>Paul Mikloaycik 9:00 AM</p>	<p>AM</p> <p>Meet with ADL Air Team: Coordination and Review</p> <p>Meet with ADL Radiation Team: Coordination and Review</p> <p>PM</p> <p>Document Review</p>

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 2 June 24-29, 1991 NEPA John Pulliam	AM Drafting Findings PM Draft findings to Environmental Team Leader	AM Drafting findings PM Draft findings to Environmental Team Leader	AM Revise findings PM Revise findings	AM Revise findings PM Finalize findings and section overview	AM Organizing documentation PM Technical accuracy review (closeout) 1:00	AM PM
 NEPA Hitesh Nigam	AM 8:00 C. Dietz (TAN) & (WRRTF) D. Meservey 10:30 D. Vernon, A. Banner (TRA) PM 1:30 D. McKenzie (RWMC)	AM Drafting findings PM Draft findings to Environmental Team Leader	AM Revise findings PM Interviewed T. Perkins (DOE-ID) and Bill Pigott (EG&G)	AM Revise findings PM Finalize findings and section overview	AM Organizing documentation PM Technical accuracy review (closeout) 1:00	AM PM

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 2 June 17-22, 1991 NEPA Lorene Sigal Warren Webb	AM Orientation PM Orientation	AM OSHA Training PM OSHA Training	AM Interview - DOE-ID, (7:45) T. Perkins (Sigal & others) - ANL-W (Webb) R. Tom (8:30) G. Marshall PM Interview planning	AM Interview (Webb) - MK Ferguson (7:30) D. York G. Malone - Rockwell (8:00, Sigal) D. Janke D. Alexander - WINCO (10:00, Webb) G. Franz PM Interview D. Jansen, EG&G (Sigal)	AM Interview L. Witbeck, ANL-W (Webb); PM Interview D. Jansen, EG&G, B. Bocohan, M. Garvey, R. Lloyd, ID (Sigal) PM Interview D. Markam, T. Reynolds, NERP Coordinator (Webb);	AM NEPA Team Meeting** PM NEPA Team Meeting**
NEPA Cindy Heckman Tom England Joe Nixon	AM Orientation PM Orientation	AM OSHA Training PM OSHA Training	AM Review NEPA files Coordination ongoing/proposed projects with NEPA determination PM Review NEPA files Coordination ongoing/proposed projects with NEPA determination	AM Interview T. Perkins, ID (Heckman) PM Review and coordination of NEPA activities	AM Review and coordination* PM Review and coordination*	AM NEPA Team Meeting** PM NEPA Team Meeting**
			**Assign responsibilities for Findings; Draft Overview; Discuss Evidence for Findings; Preliminary Drafts of Findings			*Ground Truth selected ongoing projects re: NEPA determinations and documentations

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 2 June 24-29, 1991 NEPA Lorene Segal Warren Webb	AM 8:00 T. Moriarty, EG&G (Sigal) 10:30 N. Stanley, EG&G (Sigal) PM 1:00 T. Perkins, ID 3:00 M. Lindsey, EG&G 4:00 W. Lloyd	AM Webb interviews 9:00 T. Gesill-RESL 10:00 T. Reynolds- RESL 11:00 B Orr-USGS et. al. Sigal Interviewed Brian Edgerton (DOE- ID) et. al. 9:30 a.m. PM Revise findings Draft findings to Environmental Team Leader	AM Revise findings PM Sigal interviewed J. Lyle DOE-ID (3:00) and M. Koll (EG&G) at 5:00 Webb contacts R. Bone (WINCO) R. McFarland (BLM), C. Powers (DOE-ID) L. Mann (USGS)	AM Revise findings PM Finalize findings and section overview	AM Organizing documentation PM Technical accuracy review (closeout) 1:00	AM PM
NEPA Cindy Heckman Tom England Joe Nixon	AM Drafting Findings PM Draft findings to Environmental Team Leader	AM Revise findings PM Draft findings to Environmental Team Leader England contacts: R. Bone (WINC) N. Stewart (ANL-W) M. Sorensen (RT) D. York (MR-FIC)	AM Revise findings PM Draft findings to Environmental Team Leader England contacts: B. Ringe (EG&G)	AM Revise findings PM Finalize findings and section overview	AM Organizing documentation PM Technical accuracy review (closeout) 1:00	AM PM

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 3 July 1-6, 1991 Air Paul E. Flaherty	AM Follow up on ANL-W TREAT and WINCO LET&D Meet with ambient air sampling program design people, E. Chew PM Interview PTI personnel responsible for air permitting/air pollution control Toured coal ash pit disposal adjacent to WINCO's ICPP coal plant	Document review and follow up with ANL-W, ICPP, and ID.	Travel			
Air Joseph C. Sabatini	AM Follow-up visits CFA Batch Plant WERF CFA Mn ore pile PM Asbestos meeting coordinated with toxic and chemical materials Document review	Document review				

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 3 July 1-3, 1991 Water Joe Fromal	AM ICPP - Interview, Document Collection - Wastewater, Stormwater with Env. Assessments and Permitting Personnel External Inspection of Conveyance Systems, Wastewater Treatment with Technical Support Personnel PM Building and Structure Inspections with Technical Support	AM ICPP - Sample Collection with Environmental Monitoring Personnel - STP sample Building and Structure Inspections with Technical Support PM Follow up inspections and interviews				
Water Mike Bryant	AM Interview ICPP Water Treat Mgr. Building Inspections PM ICPP Structure inspection	AM Interview ICPP Maint. Mgr. Structure inspection PM ICPP Structure inspection				

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 3 July 1-6, 1991 Groundwater, Soil, Sediment, and Biota Andrew Smyth	AM Interview Geosciences	Interview J. Lyle and L. Green, Environmental Restoration, D. Meservey of Decommissioning and D. Shafer of the Underground Storage Tank Program				
Groundwater, Soil, Sediment, and Biota Jim Rice	AM Observe monitoring well installation with Adam Owen 525-5498 PM WINCO document review	AM Observe USGS groundwater sampling with Project Leader PM Observe USGS sampling of Big Lost, Little Lost River with Project Leader				

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 3 July 1-3, 1991 Waste Management Tom Collins	<p>AM</p> <p>Meet with IRC waste specialists</p> <p>Tour Idaho Falls buildings, IRC and others as time permits</p> <p>PM</p> <p>Review/inspect accumulation, waste tracking, waste disposal, waste minimization programs for compliance</p>	<p>AM</p> <p>Combine findings elements with other waste management group members</p> <p>PM</p> <p>Continue findings writing</p>				
Waste Management Kathleen Gaisler	<p>AM</p> <p>AM-CFA Continue review of EG&G waste management records</p> <p>PM</p> <p>Continue review of EG&G waste management records</p>	<p>AM</p> <p>Develop findings</p> <p>PM</p> <p>Develop findings</p>	Travel			

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 3 July 1-3, 1991 Waste Management Dick Hall	AM RWMC-Meet with waste management personnel UST identification Inspect maintenance, labs, haz/mixed waste mgt., accumulation storage buildings 601, 609, 610, 617 PM RWMC (continued)	AM Prepare findings PM Prepare findings				

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 3 July 1-2, 1991 Toxic & Chemical Materials Rosemary Goydan Benson	AM MKFerguson Review haz. chem. purchasing, inventory, storage, and management systems (D. York) Interview re: chemical handling and storage procedures (warehouse manager) Visit chemical storage areas PM EG&G-CFA Interview with Hazardous Materials Shipper/Coordinator from Traffic Interview regarding asbestos abatement program management through CFA	AM DOE-ID/CFA Tour RESL (CF-690) laboratories, other DOE/ID facilities at CFA, storage areas Interview re: chemical handling and storage procedures PM DOE-ID/IF Review haz. chem. management and control systems for the INEL site Interview re: TSCA, FIFRA reporting, staff training	AM Travel PM Travel			

Environmental Team Daily Agendas

C-5

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 3 July 1-2, 1991 Toxic & Chemical Materials Margaret Miller	AM ANL-W Interview re: receipt and tracking of chemicals (Mikolaycik) Review PCB management program, inventory spill and disposal records Interview re: PCB equip. inspect., sampling procedures, disposal plans (person who does sampling, removal) Tour chemical laboratories/storage facilities PM ANL-W Inspect PCB equipment Discuss completion of PCB cleanup at EBR-II (Mikolaycik or responsible person) Review haz. chemical purchase, invent. storage procedures and records	AM ANL-W Interview M. Sanchez re: security training for chemical releases Interview re: pesticides use, application procedures, contractors Interview re: storage and disposal procedures (pesticide applicator) Visit storage areas PM Inspect ASTs Review AST maintenance records, spill records Interview re: AST monitoring programs (N. Stewart) (coordinate with ADL SW or GW teams) Inspect chemical storage areas				

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 3 July 1-6, 1991 Quality Assurance Hilton Rivera	AM WINCO QA program evaluation consisting of interviews with -QA Representatives -Lab Supervisors -Document Control Personnel -Interviews (Leroy Lewis, Lab Director) (Rod Hand, QA Officer) PM WINCO QA program evaluation (continued) -Review of environmental monitoring programs -Sampling and analysis procedures -QA program plans -QA project plans	AM WINCO QA program evaluation (continued) -Documents review PM EG&G environmental monitoring program plans	AM Travel PM Travel			
Quality Assurance Paul Pifalo	AM PM	AM WINCO QA evaluation PM WINCO QA program evaluation (continued)	AM Travel PM Travel			

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 3 July 1-6, 1991 Quality Assurance Joe Swiniarski	AM M/L/C sampling USGS environmental monitoring for INEL QA program evaluation Document control personnel Interview B. Orr, USGS PM USGS environmental monitoring (continued) -Review of Environmental monitoring program Sampling and analysis procedures QA program plans QA project plans -Interviews (Leroy Knobel, Hydrologist)	AM Interview S. Morton RESL QA PM USGS environmental monitoring (continued) Sampling -Groundwater USGS	AM Travel PM Travel			

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 3 July 1-6, 1991 Radiation Chris Martel	<p>AM</p> <p>Meet with the coordinator of radiological environmental monitoring activities and supervisors of radiological media collection at ARA.</p> <p>PM</p> <p>Continue tour.</p> <p><u>ARA</u> Tour Buildings 626, 627, 728, 745 & 744 accompanied by the coordinator of radiological environmental monitoring activities and supervisors of radiological media collection for this area.</p>	<p>AM</p> <p>Go to ICPP See blue tent</p> <p>PM</p> <p>Meet with: T. Collins 2:00 D. Wiggins 3:30</p>	TRAVEL to Boston			
Radiation Dave Allard	<p>AM</p> <p>TAN</p> <p>Continued audit of TAN and WERRTF accompanied by coordinator of radiological monitoring activities</p> <p>PM</p> <p>TAN</p> <p>Finish audit</p>	<p>AM</p> <p>TVC Document review</p> <p>PM</p> <p>TVC Document review</p>	TRAVEL to Boston			

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 3 July 1-6, 1991 Radiation Joe Lischinsky	AM <u>Downtown Labs</u> Meet with director of the Downtown Labs and with supervisors of radiological media collection. PM Tour downtown labs accompanied by supervisors of radiological media collection and lab director.	AM Document review PM Document review Clarify information with respective sites	TRAVEL			

Environmental Team Daily Agendas

C-56

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 3 July 1-6, 1991 Inactive Waste Sites Stewart Young	AM Inspection of Facilities and Review of CERCLA Records On-Site* (TAN) PM Inspection of Facilities and Review of CERCLA Records On-Site (CFA) Program Review with PTI SARA Contact (rescheduled from Friday)	AM Inspection of Facilities and Review of CERCLA Records On-Site (ICPP) PM Inspection of Facilities and Review of CERCLA Records On-Site (TRA)	AM TRAVEL PM TRAVEL			
 Inactive Waste Sites Andrew O'Conor	AM John Griffin 9:00 AM PTI PM Document review Interviewed J. Records, SERC	AM Document review PM Interview I. Resendez, ID Interview J. Lane, EG&G	AM TRAVEL PM TRAVEL			

*Verification will be conducted On-Site, unless appropriate data are available elsewhere

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<p>Week 4 July 8-13, 1991</p> <p>Air Paul E. Flaherty</p>			Travel	<p>Verification of Preliminary Findings: interviews, and record interviews</p> <p>Meeting with SMC PSD permit people and DOE-ID environmental support</p>	<p>Verification of Preliminary Findings: follow-up inspections, interviews, and record interviews</p> <p>Finalization of Findings</p> <p>Meeting with DOE-ID environmental oversight</p>	<p>Verification of Preliminary Findings: follow up inspections, interviews, and record interviews</p> <p>Finalization of Findings</p>

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 4 July 8-13, 1991 Air Joseph C. Sabatini			Travel	Review of SMC permit applications	Verification of Preliminary Findings: follow- up inspections, interviews, and record interviews Finalization of Findings Meeting with DOE- ID environmental oversight	Verification of Preliminary Findings: follow-up inspections, interviews, and record interviews Finalization of Findings

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
Week 4 July 8-13, 1991 Water Joe Fromal				AM ARA; Interview, Document Collection - WW, Stormwater with Env. Assessments and Permitting Personnel External Inspection of Conveyance Systems, WW Treatment with Tech Support Personnel; Bldg and Structure Inspect with Tech Support Waste Treat Mgr.- ARA-620, 621, 625, 720, 728, 731, 733 PM PBF; Interview, Doc Collection -WW, Stormwater - with Env. Assessments and Permitting Personnel External Inspection of Conveyance Systems, Wastewater Treatment with Tech Support Personnel- 724, 735, 736, 738, 739, 744, 745, 746, 747, 728, 731, 733, 750, 725, 753, 760, 726, 727, 758 Bldg and Structure Inspections with Tech Support - 601, 617, 619, 632, 625, 634, 720, 611	AM MK Ferguson; Interview, Document Collection - Wastewa- ter, Stormwater- with Env. Assessments and Permitting Personnel External Inspection of Conveyance Systems, Wastewater Treatment with Technical Support Personnel Various site inspections	AM MK Ferguson; Interview, Document Collection - Wastewa- ter, Stormwater- with Env. Assessments and Permitting Personnel External Inspection of Conveyance Systems, Wastewater Treatment with Technical Support Personnel Inspect Warehouse at TAN	AM Document review

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
Week 4 July 8-13, 1991 Water Mike Bryant				AM ARA - Interview, Document Collection -Water Systems, SPCC-with Env. Assessment and Permitting Pers.; Inspect Potable and Firewater Systems, and ASTs with Technical Support Personnel ARA-604, 634, 721, 722, 730, 734, 749, 750 PM PBF - Interview, Document Collection - Water Systems, SPCC - with Env. Assessment and Permitting Personnel; Inspect Potable and Firewater Systems and ASTs with Technical Support Personnel - 602, 626, 702, 717, 737, 740, 741, 742, 743, 721, 722, 730, 734, 749, 752, 614, 709, 714, 716 Building and Structure Insp. with Tech. Support Personnel - 604, 620, 621, 624, 612, 609, 613 Follow-ups	AM MK-Ferguson and RWMC PM Building inspections	AM Document review PM Document Review	

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 4 July 8-13, 1991 Groundwater, Soil, Sediment, and Biota Andrew Smyth				<p>Verification of Preliminary Findings: follow-up interviews and record reviews</p> <p>Finalization of Findings</p>	<p>Review of records</p> <p>Verification of Preliminary Findings: follow-up inspections, interviews and record reviews</p> <p>Finalization of Findings</p> <p>Phone interviews with L. Reese and J. Mclead of the Department of Water Resources</p>	<p>Verification of Preliminary Findings: follow-up inspections, interviews and record reviews</p> <p>Finalization of Findings</p>

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 4 July 8-13, 1991 Groundwater, Soil, Sediment and Biota Jim Rice				Verification of preliminary findings: follow-up inspections, interviews and record reviews	Verification of preliminary findings: follow-up inspections, interviews and records reviews	Verification of preliminary findings: follow-up inspections, interviews and record reviews

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 4 July 8-13, 1991 Waste Management Tom Collins			AM Travel	Verification of preliminary TRA findings: follow-up inspections, interviews and record reviews Finalization of findings	Verification of preliminary ICPP findings: follow-up inspections, interviews and record reviews Finalization of findings	Verification of preliminary findings: follow-up inspections, interviews and record reviews Finalization of findings

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<p>Week 4 July 8-13, 1991</p> <p>Waste Management Kathleen Gaisler</p>				Verification of preliminary findings: follow-up inspections, interviews, and record reviews	Verification of preliminary findings: follow-up inspections, interviews, and record reviews	Verification of preliminary findings

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 4 July 8-13, 1991 Waste Management Dick Hall			PM TAN-review observations	AM SMC review UST's review observations PM CFA review observations PM Review TAN and CFA UST's	Beginning preparation of findings	Verification of preliminary findings: follow-up inspections, interviews and record reviews Finalization of findings

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<p>Week 4 June 15-20, 1991</p> <p>Toxic & Chemical Materials Rosemary Goydan Benson</p>				Document review Findings development (off-site)	Document review Findings development (off-site)	

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 4 July 8-13, 1991 Toxic & Chemical Materials Margaret Miller			Findings, performance objectives	Revisits, rechecks Followup interviews Finding development	WINCO facilities inspection	Ind. meetings on status of findings development

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 4 July 8-13, 1991 Quality Assurance Hilton Rivera			AM Travel PM Travel	AM EG&G-RML QA program evaluation consisting of interviews with -QA Representatives -Lab Supervisors -Document Control Personnel -Interviews (Lab Supervisors) (QA Representatives) PM EG&G-RML QA program evaluation (continued) -Review QA program plans QA project plans Sampling -Air stack sampling at RML	AM Findings development PM Finding development	AM Report on Status Findings PM Report on Status Findings

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 4 July 8-13, 1991 Quality Assurance Paul Pifalo			AM Travel PM Travel	AM MK-Ferguson PM MK-Ferguson	AM Findings development and validation PM Findings development and validation	AM Report on Status Findings PM Finding development

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 4 July 8-13, 1991 Quality Assurance Joe Swiniarski			AM Travel PM Travel	AM Revisit RESL PM Findings development and validation Findings development and validation Sampling - ^{85}Kr sampling at RESL -Potable water for RAD-CFA	AM Findings development and validation PM Findings development and validation	AM Report on Status of Findings PM Findings development and validation

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 4 July 7-13, 1991 Radiation Chris Martel			TRAVEL to Idaho Falls	AM RESL Review integration of Sitewide Environmental Monitoring Programs. PM Continue Review.	AM Observe air sample filter changing of ambient monitors maintained by RESL. PM Visit soil sampling locations PM Return to TVC. Review RESL SOP's, Site Environmental Report, and close calculations.	

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 4 July 7-13, 1991 Radiation Dave Allard			TRAVEL to Idaho Falls AM RESL Review integration of Sitewide Environmental Monitoring Programs. PM Continue Review.	AM TVC Followup work on telephone PM Continue followup work.		AM TVC Finding development PM Continue finding development

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 4 July 7-13, 1991 Radiation Joe Lischinsky			TRAVEL	AM RESL Review integration of Sitewide Environ- mental Monitoring Programs. PM Continue Review.	AM Continue Review. PM Continue Review.	Findings development

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 4 July 7-13, 1991 Inactive Waste Sites Stewart Young			AM TRAVEL PM TRAVEL	AM Inspection of Facilities and Review of CERCLA Records On-Site (PBF) PM Inspection of Facilities and Review of CERCLA Records On-Site (ANL)	AM Inspection of Facilities and Review of CERCLA Records On-Site (RWMC EBR1 BORAX) PM Document Review	AM Individual Meetings on Status of Findings PM Document Review

*Verification will be conducted On-Site, unless appropriate data are available elsewhere.

Environmental Team Daily Agendas

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<p>Week 4 July 7-13, 1991</p> <p>Inactive Waste Sites Andrew O'Conor</p>			<p>AM TRAVEL PM TRAVEL</p>	<p>Verification of preliminary findings: follow-up inspections, interviews, and record interviews</p>	<p>Verification of preliminary findings: follow-up inspections, interviews, and record interviews</p>	<p>AM Document Review PM Document Review</p>

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 5 July 15-20, 1991 Air Paul E. Flaherty	AM Meeting with MK-FIC PM Meeting with EG&G Verification of Preliminary Findings: follow-up inspections, interviews, and record interviews Finalization of Findings	Verification of Preliminary Findings: follow-up inspections, interviews, and record interviews PM Finalization of Findings	Verification of Preliminary Findings: follow-up inspections, interviews, and record interviews PM Finalization of Findings	Verification of Preliminary Findings: follow-up inspections, interviews, and record interviews PM Finalization of Findings	Verification of Preliminary Findings: follow-up inspections, interviews, and record interviews PM Finalization of Findings	

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 5 July 15-20, 1991 Air Joseph C. Sabatini	Verification of Preliminary Findings: follow up inspections, interviews, and record interviews Finalization of Findings Meeting with EG&G air personnel	Verification of Preliminary Findings: follow up inspections, interviews, and record interviews Finalization of Findings Meet with DOE-ID environmental technical support	Verification of Preliminary Findings: follow up inspections, interviews, and record interviews Finalization of Findings Meet with Rockwell to discuss findings	Verification of Preliminary Findings: follow up inspections, interviews, and record interviews Finalization of Findings	Verification of Preliminary Findings: follow up inspections, interviews, and record interviews Finalization of Findings	

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 5 July 15-20, 1991 Water Joe Fromal	AM PM	AM PM	AM PM Validation of Findings Follow-up Inspections and interviews	Validation of Findings Follow-up inspections and interviews	Validation of Findings Follow-up inspections and interviews	Validation of Findings Follow-up inspections and interviews

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 5 July 15-20, 1991 Water Mike Bryant	AM PM	AM PM	AM PM Validation of Findings Follow-up inspections and interviews	Validation of Findings Follow-up inspections and interviews	Validation of Findings Follow-up inspections and interviews	Validation of Findings Follow-up inspections and interviews

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 5 July 15-20, 1991 Groundwater, Soil, Sediment, and Biota Andrew Smyth	Meeting with ERIS representatives and environmental surveillance personnel	Verification of Preliminary Findings: follow-up inspections, interviews and record reviews Finalization of Findings Meeting with R. Arnett and L. Hull to discuss ERIS and site hydrologic characterization	Verification of Preliminary Findings: follow-up inspections, interviews and record reviews	Verification of Preliminary Findings: follow-up inspections, interviews and record reviews	Verification of Preliminary Findings: follow-up inspections, interviews and record reviews	Verification of Preliminary Findings: follow-up inspections, interviews and record reviews Finalization of Findings

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 5 July 15-20, 1991 Groundwater, Soil, and Sediment and Biota Jim Rice	Verification of preliminary findings: follow-up inspections, interviews, and records reviews Finalization of findings	Verification of preliminary findings: follow-up inspections, interviews, and records reviews Finalization of findings	Verification of preliminary findings: follow-up inspections, interviews, and records reviews Finalization of findings	Verification of preliminary findings: follow-up inspections, interviews, and records reviews Finalization of findings	Verification of preliminary findings: follow-up inspections, interviews, and records reviews Finalization of findings	

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 5 July 15-20, 1991 Waste Management Tom Collins	PM Verification of preliminary findings: follow-up inspections, interviews and record reviews Finalization of findings	Verification of preliminary findings: follow-up inspections, interviews and record reviews Finalization of findings	Verification of preliminary findings: follow-up inspections, interviews and record reviews Finalization of findings	Verification of preliminary findings: follow-up inspections, interviews and record reviews Finalization of findings	Verification of preliminary findings: follow-up inspections, interviews and record reviews Finalization of findings	

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 5 July 15-20, 1991 Waste Management Kathleen Gaisler	Verification of preliminary findings: follow-up inspections, interviews, and record reviews Finalization of findings	Verification of preliminary findings: follow-up inspections, interviews, and record reviews Finalization of findings	Verification of preliminary findings: follow-up inspections, interviews, and record reviews Finalization of findings	Verification of preliminary findings: follow-up inspections, interviews, and record reviews Finalization of findings	Verification of preliminary findings: follow-up inspections, interviews, and record reviews Finalization of findings	

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 5 June 15-20, 1991 Waste Management Dick Hall	Verification of preliminary findings: followup inspections, interviews and records reviews Finalization of findings	AM ANL-W complete tour PM Central landfill	AM RWMC PM Verification of preliminary findings: followup inspections, interviews and record reviews Finalization of findings	Verification of preliminary findings: followup inspections, interviews and record reviews Finalization of findings	Verification of preliminary findings: followup inspections, interviews and record reviews Finalization of findings	

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 5 July 15-20, 1991 Toxic & Chemical Materials Rosemary Goydan Benson	Revisits, rechecks Followup interviews Findings development	Revisits, rechecks Followup interviews Findings development	Findings development Followup interviews and revisits at CFA and MK-FIC subcontractors	Revisits, rechecks Followup interviews Findings development	Revisits, rechecks Followup interviews Findings development	Findings development

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 5 July 15-20, 1991 Toxic & Chemical Materials Margaret Miller	Revisits, rechecks Followup interviews Findings development	Findings Development				

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 5 July 15-20, 1991 Quality Assurance Hilton Rivera	AM Calls to verify findings PM Findings development and validation	AM Findings development and validation PM Findings development Sampling	AM Meet with RWMC VVE Manager PM Findings development and verification	AM Finding development PM Findings development and validation	AM Findings development and validation PM Findings development and validation	AM Findings development and validation PM Findings development and validation QA Status Update with Other Disciplines

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 5 July 15-20, 1991 Quality Assurance Paul Pifalo	AM Finding development PM Document review	AM Findings development and validation PM Findings development and validation	AM Findings development and validation	AM Findings development and validation PM Findings development and validation	AM Findings development and validation PM Findings development and validation	AM Findings development and validation PM Findings development and validation QA Status Update with Other Disciplines

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 5 July 15-20, 1991 Quality Assurance Joe Swiniarski	AM M. Hankins: sampling Findings development and validation PM Findings development and validation	AM Sampling - Liquid effluent at CFA and TAN PM Findings development and validation	AM Sampling - Crested wheat grass at RWMC - Deer mice PM Findings development and validation	AM Findings development and validation PM Findings development and validation	AM Findings development and validation PM Findings development and validation	AM Findings development and validation PM QA Status Update with Other Disciplines

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 5 July 15-20, 1991						
Radiation Chris Martel	AM Findings validation and confirmation PM Findings validation and confirmation	AM Findings validation and confirmation PM Findings validation and confirmation	AM Findings validation and confirmation PM Meet with RWMC at TVC PM Findings validation and confirmation Meet with ICPP at TVC	AM Findings validation and confirmation PM Findings validation and confirmation	AM Findings validation and confirmation PM Findings validation and confirmation	AM Findings validation and confirmation PM Findings validation and confirmation

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 5 July 15-20, 1991 Radiation Dave Allard	AM Findings validation and development PM Findings validation and development					

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 5 July 15-20, 1991 Radiation Joe Lischinsky	AM Findings validation and development PM Findings validation and development					

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 5 July 15-20, 1991 Inactive Waste Sites Andrew O'Conor	AM Develop Findings PM Develop Findings Meet with B. Malone, MK-FIC 1:00 pm - cancelled - must be rescheduled - completed	Meet with TAN Fire Department - cancelled - rescheduled - completed AM Develop Findings PM Develop Findings	AM Develop Findings PM Develop Findings	AM Develop Findings PM Develop Findings	AM Finish Findings PM Finish Findings	

Environmental Team Daily Agenda

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 5 July 15-20, 1991 Inactive Waste Sites Stewart Young	AM Develop Findings PM Develop Findings	AM Develop Findings PM Develop Findings	AM Develop Findings PM Develop Findings	AM Develop Findings PM Develop Findings	AM Review meeting with DOE and EG&G PM Interviews at EG&G regarding ARDC and RWMC PM Finish Findings	

APPENDIX D

**LIST of INTERVIEWS CONDUCTED by
the ENVIRONMENTAL SUBTEAM
IDAHO NATIONAL ENGINEERING LABORATORY
(Attached on microfiche)**

Appendix D — Contacts and Interviews



APPENDIX E

**LIST of SITE DOCUMENTS REVIEWED by
the ENVIRONMENTAL SUBTEAM
IDAHO NATIONAL ENGINEERING LABORATORY
(Attached on microfiche)**

Appendix E — Site Documents Reviewed by the Environmental Team



APPENDIX F

**OSHA NONCOMPLIANCE
DOE TIGER TEAM ASSESSMENT
IDAHO NATIONAL ENGINEERING LABORATORY
(Attached on microfiche)**

Appendix F — OSHA Noncompliances



APPENDIX G

**HOT LINE REPORTS AND RESPONSES
DOE TIGER TEAM ASSESSMENT
IDAHO NATIONAL ENGINEERING LABORATORY**

Appendix G — Tiger Team Hot Line Calls and Responses



APPENDIX G

TIGER TEAM HOT LINE CALLS AND RESPONSES IDAHO NATIONAL ENGINEERING LABORATORY

An onsite Tiger Team Hot Line for ES&H complaints was established for the INEL assessment, and operated by the Tiger Team between June 19 and July 15, 1991. The hot line was established to allow INEL personnel, as well as the general public, to report specific ES&H concerns. Notifications of the hot line and its purpose was made in local newspapers, at a press conference, and through site newsletters. In addition notices were distributed to each INEL organizational entity. The notices also informed INEL 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 Inspector General at (800) 541-1625, (202) 586-4073, or FTS 896-4073.

This Appendix provides a synopsis of each call received on the hot line and the subsequent response actions taken by the Tiger Team.

APPENDIX G

IDAHO NATIONAL ENGINEERING LABORATORY TIGER TEAM ASSESSMENT HOT LINE REPORTS

CONTROL #1

DATE: June 19, 1991

NATURE OF CONCERN: Individual had concerns regarding the Radio and Alarm Shop and fire and security alarm systems. In addition there was an issue with the security infraction requirements.

RESPONSE: Issues were referred to the Safety and Health Team. After discussions with the contractor and a review of the current practices, all concerns were determined not to be valid safety items. The security infraction issue was referred to DOE-ID for action. The individual was called and details on each concern were given.

CONTROL #2

DATE: June 20, 1991

NATURE OF CONCERN: An anonymous caller expressed concern that DOE-ID occupational health section of the Safety Division could not perform adequate oversight of contractors due to inadequate staffing. Caller suggested that the recent death of a construction worker in a fork lift accident may have been avoided if DOE-ID had been performing oversight duties. Also, caller indicated a lack of asbestos inventories at INEL.

RESPONSE: Concerns were assigned to the Management Team for review. DOE-ID is in the process of hiring additional personnel in the safety organization. The DOE-ID Occupational Safety Branch had conducted 29 OSHA type inspections (5 of which were at ICPP) and no findings were made in vehicle safety nor were concerns expressed by ICPP personnel when asked about vehicle safety by the inspector. Current status of asbestos inventory was considered in the Tiger Team report.

CONTROL #3

DATE: June 21, 1991

NATURE OF CONCERN:

An anonymous caller related the following concerns: D&D work at BORAX is being done without an OSHA health and safety plan; there is no data validation procedures in the Environmental Restoration (ER) Program; no method to validate radiation data nor is there a management plan for waste disposal of cuttings and waste water from the drill cuttings and purge water from wells; there are no "as-built" drawings for drill holes.

RESPONSE:

The Management Team reviewed the concerns. The D&D plan does reference health and safety processes and address hazards; the EG&G Safety Manual and Radiological Control Manual also pertain to D&D. A review determined a number of deficiencies in the ER Program data validation, i.e., lack of quality assurance and sample integrity. Regarding disposal of cuttings and purge water, procedures and policies for the management of wastes from drilling and sampling operations are either in draft or do not exist for various firms at the INEL. As-built drawings are not available for all wells and drill holes that are constructed at the INEL. Wells installed as a part of the ER Program or RCRA Groundwater Monitoring Program have as-built diagrams on file. This response was taken into consideration in the Tiger Team Report.

CONTROL #4

DATE: June 21, 1991

NATURE OF CONCERN:

Concern that subcontractor may take credit for firing an individual when in fact person had volunteered for layoff.

RESPONSE:

Information only, no action required.

CONTROL #5

DATE: June 21, 1991

NATURE OF CONCERN:

Unidentified caller who was representing about 100 employees of the EG&G INEL Research Center (IRC) asked that Tiger Team look into the hood and air quality system in the labs. Employees have been complaining for years and safety officer admits there is a problem but employees aren't aware that anything has ever been done to correct the problem.

RESPONSE:

Safety and Health Team looked at the situation and concluded that there are problems with the ventilation

system. Only about 60% of the hoods in the building can be on at any one time because of inadequate flow capacity. There is a project budgeted in '91 to revise the design of the ventilation system and a '92 project for construction. In the interim, the IRC limits the number of hoods in which work can be performed to allow the system to operate within the existing flow capacity.

CONTROL #6

DATE: June 21, 1991

NATURE OF CONCERN: Unidentified caller expressed concern that "root cause" of problems at the INEL is "people related." The caller questioned the qualifications of staff and management of the DOE-ID Environmental Restoration and Waste Management organization.

RESPONSE: Call was assigned to the Management Team for review which indicated that recruiting emphasis is on securing competent personnel with strong ES&H qualifications and experience in managing complex programs. Today there are a number of new personnel, seven interns (college recruits to develop a solid technical staff foundation for the future) and several vacancies. There is a formal qualification and training program.

CONTROL #7

DATE: July 12, 1991

NATURE OF CONCERN: An employee of EG&G Idaho, Inc. contends that some of the key findings in a 3-12 year old ID report are technically incorrect, misleading, and the report should be corrected or withdrawn. The report deals with a welding program for TVA's Watts Bar Nuclear Plant-1 and has safety implications. The employee has been pursuing his concerns for 5 years and has still not achieved his objectives.

He claims EG&G and DOE-ID employee concerns programs did not function efficiently in this instance. He further claims that, as a result of his continued efforts, he has been discriminated against as a "whistleblower."

RESPONSE: The concern was given to the Management Team for disposition. Meetings were held with the employee as well as other members of EG&G staff familiar with the report which was prepared by EG&G personnel. Background material provided by the concerned employee was reviewed, including the ID report and recent appraisals by his supervision of the concerned employee's performance. Based on those interviews and a review of the documentation, the Management Team recommended the case be referred to the DOE-HQ Office of Inspector General for consideration.

CONTROL #8

DATE: June 24, 1991

NATURE OF CONCERN: Unidentified caller asked that Tiger Team look into the Auto Body Shop where bus and auto repairs are done. Employees have complained about headaches, fumes, chemicals, etc. Appears to be poor ventilation.

RESPONSE: Safety and Health Team visited the shop where "Job Hazard Analysis" forms were reviewed. Data indicated exposures were very low. No real potential for exposure above the action level for any of the materials involved.

CONTROL #9

DATE: June 25, 1991

NATURE OF CONCERN: A member of the PTI guard force requested a meeting with the Tiger Team to express concerns, in particular, the conditions in the PTI exercise room at CPP.

RESPONSE: The exercise room was visited by the Safety and Health Team as well as PTI management. PTI was appalled at the conditions, closed the facility, and moved to a more suitable location at CF-609.

CONTROL #10

DATE: June 25, 1991

NATURE OF CONCERN: Employee suffering from stress related to a personal, non-work situation was not allowed to use sick leave after it was recommended by the company psychologist that he take time off.

RESPONSE: Assigned to Management Team who met with DOE-ID and appropriate company personnel. DOE-ID and contractor are working the problem.

CONTROL #11

DATE: June 26, 1991

NATURE OF CONCERN: Unidentified caller expressed concern about 20,000 yards of contaminated dirt which may have been improperly disposed of in 1984.

RESPONSE: The Environmental Team investigated the issue and found that the site is identified as CPP 34. It is classified as an LDU and a closure plan was submitted on June 4, 1990.

CONTROL # 12

DATE: June 26, 1991

NATURE OF CONCERN: Concern didn't relate to Tiger Team responsibility.

RESPONSE: Referred to DOE-ID for information and/or action.

CONTROL #13

DATE: June 26, 1991

NATURE OF CONCERN: Unidentified subcontractor employee asked that Tiger Team look at the recycling bins which are located on the outside of buildings located in the Idaho Falls area, i.e., Willow Creek Building (WCB). They have large metal lids which have sharp edges and protruding nails.

RESPONSE: A member of the Safety and Health Team visited the WCB and concurred with the conditions mentioned by the caller. The bins belong to American Recycling, which should be responsible for repairing or replacing the bins. The safety engineer agreed to call the company and have the containers repaired or replaced.

CONTROL #14

DATE: June 26, 1991

NATURE OF CONCERN: Caller had concerns which didn't relate to Tiger Team responsibility.

RESPONSE: Referred to DOE-ID for information and/or action.

CONTROL #15

DATE: June 26, 1991

NATURE OF CONCERN: Unidentified caller expressed that several members of family had worked at INEL and have died of cancer. Has seen film clips shown on local TV stations

depicting improper waste burial which took place at the site in 1956. Is wondering if this has seeped into the water system and contaminated the area.

RESPONSE:

The Environmental Team is evaluating the INEL program for identifying and cleaning up of the inactive waste sites. All related findings are being incorporated in the Tiger Team Assessment Report. Additionally, the groundwater monitoring and characterization program at the INEL is being evaluated as part of the assessment. The Team was unable to identify the specific burial site the caller referred to. There is no evidence that the public water supply systems have been contaminated due to waste management practices at the INEL.

CONTROL #16

DATE:

June 27, 1991

NATURE OF CONCERN:

Unidentified caller was concerned with hood ventilation system at CF-690 (RESL). The duct work is in bad shape in crawl spaces above ceiling and on roof. The perchloric acid hoods have wash down systems which only go to the roof. Stacks above roof are not washed down and could be a potential explosion hazard. Issue has not been reported in past.

RESPONSE:

Safety and Health Team investigated and found that some of the perchloric acid hoods are over 30 years old and are showing signs of corrosion. For the three oldest hoods, two are scheduled to be replaced this fiscal year and the third is scheduled to be replaced in '92. There doesn't appear to be holes in the duct work from the corrosion. Stacks are not washed as is the duct work. There is no convenient way to inspect them for corrosion or buildup of potentially explosive compounds so couldn't determine first hand knowledge of the condition of the stacks.

CONTROL #17

DATE: June 27, 1991

NATURE OF CONCERN: An unidentified ANL-W employee expressed concern about radiation worker and respiratory training and respirator fit procedures. There was also a concern with stack effluent monitor calibration.

RESPONSE: The Safety and Health Team verified that the ANL-W respiratory protection program is not in compliance with standards. A concern is contained in the ANL-W (Team 2) report which will require action on the part of ANL-W to bring all elements of the program into compliance. The team also found that air monitor calibration needs improvement and a concern is contained in the ANL-W (Team 2) report which will require action.

CONTROL #18

DATE: June 27, 1991

NATURE OF CONCERN: Caller had concern which didn't relate to Tiger Team responsibility.

RESPONSE: Referred to DOE-ID for information and/or action.

CONTROL #19

DATE: June 27, 1991

NATURE OF CONCERN: An anonymous complaint was received by one of the Tiger Team members which concerned electrical safety issues at the DOE-ID office building. Specifically, the concern was that surge protection devices were being overloaded in the DOE offices.

RESPONSE: The Safety and Health Team investigated the complaint and determined that it is a valid concern. The following non-compliance items were noted: circuits are being overloaded; and breaker boxes for the general office circuits are inaccessible in that they are in a locked room. DOE-ID was notified of findings.

CONTROL #20

DATE: June 27, 1991

NATURE OF CONCERN: Unidentified caller expressed concern that employees at the ICPP are required to wear TLD dosimetry badges and personnel security identification badges at all times while in the plant areas. However, joggers go out at noon and jog in the area and don't wear either badge.

RESPONSE: The Management Team was responsible for visiting the ICPP. A check was made on June 28 by the guard force and of the 12 joggers checked, 2 did not have proper badges. Proper disciplinary action was taken.

CONTROL #21

DATE: June 28, 1991

NATURE OF CONCERN: Concern did not relate to Tiger Team responsibility.

RESPONSE: Referred to DOE-ID for information and/or action.

CONTROL #22

DATE: June 28, 1991

NATURE OF CONCERN: Unidentified caller was concerned about the exhaust evacuation system in CF-665, particularly in winter.

RESPONSE: Safety and Health Team investigated the caller's concern and concern appears to be substantial for winter conditions. The system is recognized to be less effective than desired and an upgrade has been considered. The delay has been in that a new building is planned and management doesn't appear to want to commit the funds to upgrade a system that is about to be replaced. Industrial Health has taken CO measurements and verified that exposures are below the TWA/STEL. Since exposures are below limits, this is a nuisance issue and not a health or compliance issue.

CONTROL #23

DATE: June 28, 1991

NATURE OF CONCERN: A construction supervisor asked to have Tiger Team member call him regarding general safety issues.

RESPONSE: The caller had no specific safety complaints. His call was directed at obtaining clarification regarding responsibility for safety and health issues. By the nature of the discussions held between the caller and the Safety and Health Team the matter can be considered closed.

CONTROL #24

DATE: June 28, 1991

NATURE OF CONCERN: Unidentified caller wanted information on mud duck deaths which occurred in the 1970's in the Howe sinks. Rumor was that radioactivity in the lakes killed the ducks. The remains of the ducks were removed under suspicious circumstances. The lakes are dry now and caller wondered if there was any radioactivity in the dry lake beds.

RESPONSE: The Environmental Team looked into the issue. INEL has not identified any inactive waste site in the vicinity of Howe. The Idaho State Fish and Wild Life Agency was contacted to obtain additional details on the bird kill incident. Fish and Wildlife personnel indicated that infectious agents were the likely cause of large scale mortality.

CONTROL #25

DATE: June 28, 1991

NATURE OF CONCERN: Unidentified caller was concerned that DOE upper management is not following CERCLA process in prioritizing sites to be cleaned up.

RESPONSE: The Environmental Team looked specifically at the process used by INEL to prioritize actions under the Environmental Restoration Program. While it is not clear that there are issues related to "not following the CERCLA process in prioritizing sites" as expressed by the caller, the Environmental Team has surfaced a number of concerns about the prioritization process employed by the site that will likely be incorporated into a finding in the IWS discipline (Section 3.5.8 of the Tiger Team report).

CONTROL #26

DATE: June 28, 1991

NATURE OF CONCERN: Unidentified Argonne security guard reported a number of miscellaneous concerns.

RESPONSE: The Management Team investigated each of the concerns and found nothing to support any of the allegations.

CONTROL #27

DATE: June 28, 1991

NATURE OF CONCERN: An individual from Arco, Idaho, called to express concern about a lead container which may have been used for storage of radioactive material and is now located on private property. Would like to know whether or not the container is safe.

RESPONSE: Issue was transferred to the State of Idaho to investigate. Idaho State Patrol surveyed the container, found it to be safe, and notified the caller.

CONTROL #28

DATE: June 28, 1991

NATURE OF CONCERN: Unidentified contractor employee asked that Tiger Team look at OSHA Hazard codes assigned to the chemicals in the IRC. Felt the coding was inconsistent from one lab to another.

RESPONSE: Hazard Communication labeling was reviewed during the assessment by the Safety and Health Team. Problems and inconsistencies with labeling have been addressed by the Tiger Team Worker Safety group.

CONTROL #29

DATE: June 28, 1991

NATURE OF CONCERN: Unidentified caller has concerns about the safety and maintenance of three Rockwell buildings: 606, 677, and 629.

RESPONSE: The Safety and Health Team surveyed all three buildings and identified 16 noncompliances of OSHA standards in Bldg. 606 (all considered to represent serious hazards to employees); 3 noncompliances in Bldg. 677; and 8 noncompliances (all considered serious) in Bldg. 629.

CONTROL #30

DATE: June 28, 1991

NATURE OF CONCERN: Unidentified caller asked that Tiger Team look at the HEPA and chemical ventilation systems in the new modular building at CFA which consists of 10 trailers linked together and houses environmental labs. Welds in the duct work appeared to be poor design.

RESPONSE: The Safety and Health Team investigated the concern; and the systems in question have been designed and built with the fan housings on the roof. If there is a leak caused by the joints in the duct work, the result will be the leakage of room air into the duct, not leakage of contaminants out of the duct. Unless the leaks were to become severe and no repairs were made, this would not degrade the operation of the hood sufficiently to present a hazard.

CONTROL #31

DATE: June 28, 1991

NATURE OF CONCERN: An anonymous caller expressed concern that at the SMC 679 Bldg. there are no maintenance procedures and safe work permits are not used. Certifications for welders are poor. Because of four day work week, there is no maintenance manager working on Fridays. MK-FIC has no safety representative at the SMC. Rockwell does not have an employee concerns program.

RESPONSE: The Management Team investigated the concerns. Review indicated that maintenance performance instructions are transmitted to the workers in the format of approved work orders and attachments versus formal preapproved work procedures. Rockwell uses Hazardous Work Permits which are comparable to Safe Work Permits. Rockwell welders are certified. Maintenance managers do not routinely work Fridays, but one of the maintenance workers is designated leader. A designated Facility Manager is available at all times. MK-FIC does not have a safety representative at the SMC. Rockwell has an employee concerns program.

CONTROL #32

DATE: July 1, 1991

NATURE OF CONCERN: Unidentified caller was concerned with lock and tag out issue in Bldg. 629 at Test Area North and a drum evaporator incident in 607 Bldg which may have had a radioactive environmental release.

RESPONSE: Safety and Health Team investigated and found that after the lock and tag out issue referred to, there was a review of the facilities' lockout/tagout program by facility personnel which resulted in major positive changes to the program. The maintenance personnel had no complaints relative to the program. The incident in the 607 Bldg. was reviewed. There were no radioactive materials present in the drum. Secondary spill containment is provided and is adequate to contain spills.

CONTROL #33 and #34

DATE: July 1, 1991

NATURE OF CONCERN: Concern did not relate to Tiger Team responsibility.

RESPONSE: Referred to DOE-ID for information and/or action.

CONTROL #35

DATE: July 1, 1991

NATURE OF CONCERN: An unidentified DOE employee called with a concern that the ventilation in the DOE-ID building is faulty.

RESPONSE: The Safety and Health Team received a number of complaints along this same line. The following controls have been instituted: ventilation has been rerouted to eliminate dead air space; a smoking policy has been implemented.

CONTROL #36

DATE: July 1, 1991

NATURE OF CONCERN: Individual who works for construction subcontractor was concerned that, at the INEL construction sites, workers are not provided with smoke free lunch facilities.

RESPONSE: Currently, there are no OSHA standards which address second hand smoke. The individual was informed that he could contact the Federal OSHA office in Boise which will sample locations of concern but cannot make a ruling. The issue can also be pursued through the union steward or labor relations.

CONTROL #37

DATE: July 2, 1991

NATURE OF CONCERN: Unidentified employee asked that Tiger Team look at how RCRA hazardous waste manifests are handled by both EG&G and DOE-ID.

RESPONSE: The Environmental Team reviewed RCRA hazardous waste manifests for both onsite and offsite shipments at the INEL. They found no significant problems regarding handling of manifests.

CONTROL #38

DATE: July 2, 1991

NATURE OF CONCERN: Unidentified caller asked that Tiger Team look at DOE's Emergency Planning Action Plan.

RESPONSE: Referred to Management Team for review. Response is considered in the Tiger Team report.

CONTROL # 39

DATE: July 2, 1991

NATURE OF CONCERN: Unidentified caller wanted name and number of Tiger Team member to discuss NQA-1 Quality Assurance.

RESPONSE: Caller was supposed to call back next day for information and did not call again. No further action.

CONTROL #40

DATE: July 2, 1991

NATURE OF CONCERN: Unidentified caller asked that the Environmental Team look at the Subsurface Disposal Area (RWMC) vapor vacuum extraction PVE. EG&G falsified quantity of VOC's that were extracted from operation. Check their monitoring equipment.

RESPONSE: Investigation by the Environmental Team members indicated that appropriate approvals were obtained for this demonstration project and the INEL has an

adequate Quality Assurance Program/Plan for the project.

CONTROL #41

DATE: July 2, 1991

NATURE OF CONCERN: An unidentified caller was concerned about INEL Environmental Restoration Project Management; i.e., program planning, site identification, prioritization, administrative record management, and staff experience and qualifications.

RESPONSE: The Environmental Team is evaluating the INEL environmental restoration program and developing appropriate findings to be included in Tiger Team report.

CONTROL #42

DATE: July 2, 1991

NATURE OF CONCERN: An anonymous EG&G employee expressed concern that site characterization is an essential part of environment restoration, but EG&G disbanded the Site Characterization Group because DOE Headquarters was not supporting it.

RESPONSE: This concern was assigned to the Management Team. Review indicated that site characterization is being performed by the EG&G Waste Assessment Group; the Site Characterization Group was disbanded since it was duplicative.

CONTROL #43

DATE: July 2, 1991

NATURE OF CONCERN: Unidentified DOE employee, who was aware that people were looking at wiring at DOE-ID building, asked that they check above the ceiling for electrical violations in the wiring and computer terminal servers. Plastic which could melt was used and there are no sprinklers.

RESPONSE: A member of the Safety and Health Team inspected the area above the ceiling tile. There are sprinklers above and below the dropped ceiling. The computer wire is low voltage dropping through the raceway and coming out at floor level. These wires are protected by heat breakers. In event of overheating, the power will move to another auxilliary electric system. It's unlikely there would be overheated wires. No plastic which could melt was found. There did not appear to be a problem.

CONTROL #44

DATE: July 2, 1991

NATURE OF CONCERN: Unidentified contractor employee wanted to express his frustrations regarding excessive safety regulations. He felt some safety regulations may not be worth the cost. We have spent millions getting ready for the Tiger Team, have destroyed production, and we're not a bit safer.

RESPONSE: No response or action required.

CONTROL #45

DATE: July 2, 1991

NATURE OF CONCERN: A former employee of ANL-W alleges that threats had been made against his career by ANL-W because he raised a quality of work issue that he believed had potential safety implications.

RESPONSE: The concern was given to the Management Team for disposition. Upon investigation it was learned that the Office of Nuclear Safety, DOE-HQ, has been investigating the safety aspects of the allegations and will issue a report in the near future.

CONTROL #46

DATE: July 3, 1991

NATURE OF CONCERN: Senator Dayne Watkins called and asked for the Tiger Team Leader, Ed Goldberg, to return the call.

RESPONSE: Ed Goldberg returned the call and was told by former State Senator Dayne Watkins of the importance of the INEL to the community. He also related the community's support for the INEL and how the hard work was appreciated. The Senator was thanked for his call and was assured that the Tiger Team's work would be one of integrity and fairness.

CONTROL #47

DATE: July 3, 1991
NATURE OF CONCERN: Concern didn't relate to Tiger Team responsibility.
RESPONSE: Referred to DOE-ID for information and/or action.

CONTROL #48

DATE: July 3, 1991
NATURE OF CONCERN: An anonymous WINCO employee at the ICPP expressed concern over the lack of action in resolving TSA findings and internal audits. In addition, the caller said there is a lack of traceability on components or replacement parts.
RESPONSE: The Management Team's review indicated that all TSA findings have been closed out. WINCO, with its new process should be able to control audit findings. The Tiger Team did conduct a review of QA traceability and results are included in final report.

CONTROL #49

DATE: July 8, 1991
NATURE OF CONCERN: An unidentified employee asked that the Tiger Team look at the way different chemicals from sinks, labs, etc., are discharged into ponds, which drain into a field. The Clean Air Act is not being complied with. The National Pollution Discharge Elimination System (NPDES) permits should be checked. An industrial waste treatment system is needed to accommodate growth.
RESPONSE: The Environmental Team investigated and the laboratories and sinks located in all areas such as paint shops and photo labs have been singled out as potential sources of materials which should not be placed in certain types of collection and treatment systems. A finding is being developed to physically and administratively control these discharges. A second finding is related to the collection systems and defining the type of sewers to which the sinks, labs, etc. are connected. There are no current NPDES permits for discharges within the INEL. A finding is being developed related to the evaluation of certain discharges as they may fall under the NPDES permit program.

CONTROL #50

DATE: July 8, 1991

NATURE OF CONCERN: An unidentified Argonne employee was concerned that OSHA standards in regard to distance to restrooms were not being met at Argonne Bldg. 785. Also wanted Tiger Team to look at Argonne's low level waste handling system. At one time it went with the domestic water system.

RESPONSE: First issue was addressed by the Safety and Health Team which concluded that neither 29 CFR 1910 nor 29 CFR 1926 specify distances to restrooms. As long as there is access to restroom facilities the intent has been met. Employee convenience is not a valid safety and health consideration.

The Environmental Team looked at the second issue and found that prior to 1984, all low level liquid waste was processed through a tube and sheet evaporator. The effluent was condensed and run through an ion exchanger to remove any rad components. The liquid was then tested for radioactivity and if it was less than 10-8 microcuries per milliliter it was discharged to the waste pond; if it was above 10-8 microcuries per milliliter it was run through the process again. The ion exchange material was disposed of at RWMC. The waste pond is always wet so there is no concern regarding blowing dust. Since 1984, all low level liquid waste is run through their Solids Shielded Hot Air Drum which evaporates the water, leaving only low level solids. The solids are then disposed of at RWMC.

CONTROL #51

DATE: July 8, 1991

NATURE OF CONCERN: An anonymous caller expressed concern that EG&G spends a significant amount of money to send their employees to environmental seminars and conferences; but DOE-ID spends little on their environmental employees to provide job enhancement and seminar attendance.

RESPONSE: These concerns were assigned to the Management Team. EG&G has a much larger number of environmental employees performing technical functions than DOE-ID employees and therefore require more funding. The same situation pertains to career enhancement.

CONTROL #52

DATE: July 8, 1991

NATURE OF CONCERN: An anonymous caller expressed concern that DOE-ID spends so much money training and educating contractor employees in environmental restoration and waste management, but spends very little money in training DOE-ID employees.

RESPONSE: The Management Team looked at this concern. The majority of new INEL employees are contractors, and therefore require more funding for training than DOE-ID. The DOE-ID has recently instigated an aggressive training activity.

CONTROL #53

DATE: July 8, 1991

NATURE OF CONCERN: Unidentified caller raised issues regarding Environmental Restoration Project Management (similar to Control #41).

RESPONSE: See response to Control #41.

CONTROL #54

DATE: July 8, 1991

NATURE OF CONCERN: Anonymous caller was concerned that Environmental Restoration management is reactive rather than proactive in its dealings with the State and EPA.

RESPONSE: The Environmental Team is evaluating the entire INEL Environmental Restoration Management Program including the approach towards EPA and State regulations. All findings will be incorporated in the assessment report.

CONTROL #55

DATE: July 8, 1991

NATURE OF CONCERN: Unidentified caller was concerned about Environmental Restoration Interagency Agreement. (Refer to Control #41.)

RESPONSE: See response on Control #41.

CONTROL #56

DATE: July 8, 1991

NATURE OF CONCERN: Caller had concern that did not pertain to Tiger Team responsibility.

RESPONSE: Referred to DOE-ID for information and/or action.

CONTROL #57

DATE: July 9, 1991

NATURE OF CONCERN: A former employee of WINCO alleged that he was fired because he raised concerns about safety.

RESPONSE: The Management Team investigated the issue and found that DOE-HQ is aware of the issue and will be issuing a report in the future.

CONTROL #58

DATE: July 9, 1991

NATURE OF CONCERN: A former subcontractor employee called to express concerns about the safety of rebar work in the calcine bins at ICPP. He had pursued the concerns over the past several years and had not gotten satisfaction.

RESPONSE: Since the TSA Team was not looking at ICPP, this call was referred to the Management Team in the area of employee concerns. A meeting was held with the caller who presented an overview of the history of his concerns. There was a contractual dispute which ended up in litigation. Although no formal employee concerns program was followed by the caller, during the course of the litigation all principal parties at INEL became aware of the caller's concerns. Furthermore, the caller's concern over the safety of the bins was evaluated by a technical team, comprised of WINCO and EG&G staff. The team concluded his concern had no technical merit.

CONTROL #59

DATE: July 8, 1991

NATURE OF CONCERN: Caller had similar concerns mentioned in Control #41.

RESPONSE: See response for Control #41.

CONTROL #60

DATE: July 8, 1991

NATURE OF CONCERN: An anonymous caller expressed concern that Chem Nuclear Geotech (a contractor to the Grand Junction Project Office) was showing a significant presence in the DOE-ID Environmental Restoration Division and conducting work which legally should be done by DOE-ID.

RESPONSE: The concern was addressed by the Management Team. Since the Grand Junction Project Office is not included in the scope of the INEL Tiger Team report, this concern was referred to DOE-ID.

CONTROL #61

DATE: July 9, 1991

NATURE OF CONCERN: Unidentified caller had concerns relating to the process making INEL a CERCLA site on the National Priority List.

RESPONSE: See response for Control #41.

CONTROL #62

DATE: July 9, 1991

NATURE OF CONCERN: Caller had issue which was not related to Tiger Team responsibility.

RESPONSE: Concern referred to DOE-ID for information and/or action.

CONTROL #63

DATE: July 9, 1991

NATURE OF CONCERN: An unidentified EG&G electrician was concerned that the backup to an electrician is not a trained electrician; and a lockout/tagout is difficult to clear after hours or on a weekend.

RESPONSE: The Safety and Health Team looked into the concerns and reviewed EG&G Safety Manual and Company Procedures. Administrative controls in place indicate these concerns are addressed in EG&G procedures. EG&G Idaho Safety Manual, Chapter 10, does not require backup electricians to be fully trained. Lockout/tagout clearances can be obtained by phone.

CONTROL #64

DATE: July 9, 1991

NATURE OF CONCERN: An electrician foreman with a subcontractor doing construction/maintenance work at ANL-W alleges he has been asked several times to violate ANL-W's safety procedures by prime contractor supervision. Because of such refusals, his assignment may be in jeopardy.

RESPONSE: The concern was given to the Management Team for disposition. The employee's boss discussed this matter with a top official of the prime contractor construction company. As a consequence, it was agreed that the employee in question will, as job requirements dictate, be assigned to the work at ANL-W. It also appears that no further requests will be made of any subcontractor personnel to violate any safety procedures.

CONTROL #65

DATE: July 10, 1991

NATURE OF CONCERN: Unidentified employee called and said that CFA-616 was full of unmarked, unmanaged chemicals; at Bldg. CFA-633 neutralized acids are being dumped down the drains.

RESPONSE: A member of the Safety and Health Team performed a detailed inspection of Bldg. 616. The building was a small metal building used to store surplus hardware and empty containers of assorted sizes. No chemicals are stored in this facility. All the equipment appeared to be test and computer equipment. An aggressive examination was conducted, i.e., opening boxes and moving numerous devices around in the building. The complaint was not valid.

For the CFA-633 incident, the Environmental Team investigated and found it is permissible under RCRA to neutralize an acid waste provided the only reason the acid is a waste is because of the characteristic of corrosiveness. So for the vast majority of acid wastes, unless another waste is involved, there is no RCRA problem, nor is there an environmental health or safety problem.

CONCERN #66

DATE: July 10, 1991

NATURE OF CONCERN: Unidentified caller said CF-616 is a building used by WINCO for storage. It contains lots of materials and equipment stored in an unsafe manner and what might be unlabeled hazardous chemicals.

RESPONSE: See response on Control #64 above.

CONCERN #67

DATE: July 10, 1991

NATURE OF CONCERN: Unidentified individual indicated that when employees terminate their jobs at INEL they are supposed to have an exit interview at which time they are asked if they had any safety concerns. Tiger Team should ask to see these files from all the contractors.

RESPONSE: Issue was referred to the Management Team for disposition. Only WINCO and PTI have a specific question regarding ES&H concerns on their exit interview questionnaire. EG&G is in the process of changing their exit interview form to add a safety question.

CONCERN #68

DATE: July 11, 1991

NATURE OF CONCERN: An anonymous caller indicated that INEL continues to promote the In Situ Vitrification (ISV) work even though the State of Idaho wants removal of waste. DOE-ID needs to interact with the State to resolve whether ISV is going to be an acceptable option before the Government spends millions of dollars on a process that may never be used.

RESPONSE: Referred to Management Team for review. ISV can be used for a whole range of applications from stabilizing and immobilizing TRU-contaminated waste to such non-radioactive conditions as remediation of a diesel fuel storage location. DOE-ID is not committed to any process for removal or remediation until the requisite feasibility and alternative studies are completed along with RCRA/CERCLA considerations all of which must be included in an Environmental Impact Statement and the NEPA process is completed with public hearings and the Record of Decision. DOE-ID

has been in frequent contact since 1989 with State personnel as well as the State's Oversight Group for INEL which meets bi-monthly with INEL personnel.

CONTROL #69

DATE: July 11, 1991

NATURE OF CONCERN: An unidentified caller said that at the RWMC soil vaults (ILTSF), they are illegally dumping wastes into the soil. They can't verify or validate what's being dumped.

RESPONSE: The Environmental Team investigated the allegation and concluded that the likelihood that such activities is occurring is remote. The inventory for the vaults was inspected and was found to contain the proper data needed for tracking and inventory purposes. The ILTSF pad is inspected hourly by both health physics personnel and security. Unauthorized activities in either of these areas would be noticed.

CONTROL #70

DATE: July 15, 1991

NATURE OF CONCERN: Caller had concern which didn't pertain to Tiger Team responsibility.

RESPONSE: Referred to DOE-ID for information and/or action.

CONTROL #71

DATE: July 15, 1991

NATURE OF CONCERN: Same as Control #70.

RESPONSE: See Control #70.

CONTROL #72

DATE: July 15, 1991

NATURE OF CONCERN: An unidentified INEL bus driver was concerned about untrained evacuation bus drivers, particularly in the winter.

RESPONSE: The concern was investigated by the OSHA TSA Team #3 and was turned over to TSA Team #1 (Emergency Preparedness). The results of the investigation appear in Team #1's report.

CONTROL #73

DATE: July 15, 1991

NATURE OF CONCERN: Caller was concerned with plume of air emission from the Chemical Processing Plant and in particular the fact that the emissions appeared to be well above the opacity limits in the State of Idaho air regulations.

RESPONSE: The Environmental Team called the concerned individual and explained that much of the opacity problem was due to nitrogen dioxide emissions, which were within the limits of a State air permit and that the emissions were scheduled for abatement in 1996. The Tiger Team investigated several issues relative to these emissions and the findings are described in the final Tiger Team Report.

APPENDIX H

DEFINITION OF ENVIRONMENTAL SUBTEAM CAUSAL FACTOR IDAHO NATIONAL ENGINEERING LABORATORY

Appendix H — Definition of Environmental Subteam Causal Factors



APPENDIX H

DEFINITION OF CONTRIBUTING CAUSAL FACTORS

POLICY

Evaluate if ineffective, outdated, or nonexistent policies contributed to the finding.

POLICY IMPLEMENTATION

Ascertain if written policies reflecting Federal, state, and local laws and regulations, codes, and standards were appropriately disseminated, implemented, and updated.

RISK

Evaluate if the site personnel responsible for a situation contributing to a finding have assessed and were aware of the relative degree of risk involved in the action.

PROCEDURES

Identify if written procedures that have been prepared to effectively implement site policy, DOE Orders, and Federal, state, and local laws and regulations were a contributing factor to the finding. Determine if unfamiliarity with or unavailability of those procedures contributed to the finding.

PERSONNEL

Identify if the educational and work experience backgrounds for personnel holding responsible positions contributed to the finding. Determine of the level of personnel knowledge about the technical and safety aspects of their jobs contributed to the finding.

RESOURCES

Ascertain if the number of personnel or extramural resources available to a job were a contributing factor in the finding. Evaluate if inadequacies in facilities and equipment were a contributing factor to the finding.

TRAINING

Identify if adequate personnel training on implementing site policy, DOE Orders, and applicable Federal, state, and local laws and regulations was a contributing factor to the finding.

APPENDIX H (Continued)
DEFINITION OF CONTRIBUTING CAUSAL FACTORS

CHANGE

Evaluate if changes in site missions, function, operation and established requirements, which rendered existing policies of procedures inadequate or inappropriate, were contributing factors to the finding. Evaluate if the timeliness and effectiveness of changes to site and DOE policy, and the implementing procedures, were a contributing factor to the finding.

APPRAISALS/AUDITS/REVIEWS

Determine if ineffective or insufficient appraisals/audits/reviews or oversight were secondary contributing factors to the finding, allowing deficiencies to continue to exist.

DESIGN

Evaluate if inadequate design of a system was a contributing factor to the finding.

HUMAN FACTORS

Ascertain if human factors, such as fatigue or deliberate circumvention of a safety system, were contributing factors to the finding.

BARRIERS AND CONTROLS

Determine if inadequacies in established barriers and controls, both administrative and physical, caused excessive delays (e.g., operational readiness, equipment down for routine inspections or preventive maintenance, occupied building constructed over buried waste) or did not allow for corrective action (e.g., federal or state requirements which cannot be met due to technical constraints).

SUPERVISION

Identify if ineffective direct supervisory controls for implementing policies, procedures, standards, laws, etc., were a contributing factor to the finding.

QUALITY ASSURANCE/QUALITY CONTROL

Identify if inadequacies in the quality assurance/control program were causal factors in the identified findings. This includes inadequate followup to previously identified findings.

APPENDIX I

LIST OF DOE ORDERS REFERENCED IN SECTION 4.0 IDAHO NATIONAL ENGINEERING LABORATORY

Appendix I — List of DOE Orders Referenced in Section 4.0



APPENDIX I
IDAHo NATIONAL ENGINEERING LABORATORY
LIST OF DOE ORDERS REFERENCED IN SECTION 4.0

1. DOE 5700.6B (9/23/86) **Quality Assurance**
2. DOE 4330.4 (3/25/82) **Real Property Maintenance Management**
3. DOE 5000.3A (5/30/90) **Occurrence Reporting & Processing of Operations Information**
4. DOE 5480.11 (7/20/89) **Radiation Protection for Occupational Workers**
5. DOE 5480.16 (1/2/88) **Firearms Safety**
6. DOE 5482.1B (9/23/86) **Environment, Safety, & Health Appraisal Program**
7. DOE 5480.8 (5/22/81) **Contractor Occupational Medical Program**
8. DOE 5483.1A (6/22/83) **Occupational Safety & Health Program for DOE Contractor Employees at Government-owned Contractor-operated Facilities**
9. DOE 5480.5 (9/23/86) **Safety of Nuclear Facilities**
10. DOE 5480.3 (7/9/85) **Safety Requirements for the Packaging and Transportation of Hazardous Materials, Hazardous Substances & Hazardous Wastes**
11. DOE 5480.1B (9/23/86) **Environment, Safety, & Health Program for DOE Operations**
12. DOE 5480.6 (9/23/86) **(reactors) Safety of DOE-owned Nuclear Reactors**
13. DOE 5480.4 (5/15/84) & DOE N5480.4 (6/21/89) **Environmental Protection, Safety & Health Protection Standards**
14. DOE 5480.18 (11/2/89) **Accreditation of Performance-Based Training for Category A Reactors and Nuclear Facilities**
15. DOE 5480.20 Chg 1 (6/19/91) **Personnel Selection, Qualification, Training, and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities**

APPENDIX I (CONTINUED)
IDAHO NATIONAL ENGINEERING LABORATORY
LIST OF DOE ORDERS REFERENCED IN SECTION 4.0

16. DOE 6430.1A (4/6/89) General Design Criteria
17. DOE 5481.1B (9/23/86) Safety Analysis & Review System
18. DOE 1540.1 (5/3/82) Materials Transportation & Traffic Management
19. DOE 1540.2 (9/30/86) Hazardous Material Packaging for Transport - Administrative Procedures