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TWRS Safety Program Plan

Linda M. Calderon

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Assistant Secretary for Environmental Management

Westinghouse Hanford Company
P.O Box 1970
Richland, Washington

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LIST OF ACRONYMS

AS	Analytical Services
ASA	Accelerated Safety Analysis
CBHA	Comprehensive Baseline Hazard Assessment
CFR	Code of Federal Regulations
COE	Center of Expertise
CPO	Characterization Project Operations
CY	Calendar Year
DNFSB	Defense Nuclear Facility Safety Board
DOE-HQ	Department of Energy - Headquarters
DOE-RL	Department of Energy - Richland Office
EAP	Qualitative Exposure Assessment Program
EAPC	Employee Accident Prevention Council
FEB	Facility Evaluation Board
FFTF	Fast Flux Test Facility
FHA	Fire Hazards Analysis
FP	Fire Protection
FTE	Full Time Employee
FSAR	Facility Safety Assessment Report
FY	Fiscal Year
HASP	Health and Safety Plan
HEHF	Hanford Environmental Health Foundation
HPDAC	Hanford Personnel Dosimetry Advisory Council
IH	Industrial Hygiene
IHT	Industrial Hygiene Technician
IOSR	Interim Operational Safety Requirements
IS	Industrial Safety
ISB	Interim Safety Basis Document
JHA	Job Hazard Analysis
NIOSH	National Institute of Safety and Health
NOAS	Noxious Odor Advisory System
NS	Nuclear Safety
OAC	Operations Accident Council
ORR	Operational Readiness Review
OSA	Operational Safety Assessment
OSD	Operating Specification Document
OSHA	Occupational Safety and Health Administration
OSR	Operational Safety Requirements
PIC	Person in Charge
PPE	Personal Protective Equipment
PRC	Plant Review Committee
RAC	Risk Assessment Code
RPT	Radiological Protection Technician
SAP	Safety Awareness and Performance
SAR	Safety Assessment Report
SAS	Special Analytical Services
SEAC	Safety and Environmental Advisory Council
SNF	Spent Nuclear Fuels

LIST OF ACRONYMS (Cont)

S/RID	Standards/Requirements Identification Document
Sub-TAP	Work Safety and Health Subpanel of Waste Tank Advisory Panel
SVF	Synthetic Vitreous Fiber
TAP	High Level Waste Tank Advisory Panel
TMX	Training Matrix System
TSR	Technical Safety Requirements
TFTP	Tank Farm Transition Projects
TWRS	Tank Waste Remediation Systems
USQ	Unreviewed Safety Question
VPP	Voluntary Protection Program
WBS	Work Breakdown Structure
WHC	Westinghouse Hanford Company
WSCF	Waste Sampling and Characterization Facility

ATTACHMENTS

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1.0 BACKGROUND AND PURPOSE

Management of Nuclear Safety, Industrial Safety, Industrial Hygiene, and Fire Protection programs, functions, and field support resources for Tank Waste Remediation Systems (TWRS) has, until recently, been centralized in TWRS Safety, under the Emergency, Safety, and Quality organization. Industrial hygiene technician services were also provided to support operational needs related to safety basis compliance. Due to WHC decentralization of safety and reengineering efforts in West Tank Farms, staffing and safety responsibilities have been transferred to the facilities.

Under the new structure, safety personnel for TWRS are assigned directly to East Tank Farms, West Tank Farms, and a core Safety Group in TWRS Engineering. The Characterization Project Operations (CPO) safety organization will remain in tact as it currently exists. Personnel assigned to East Tank Farms, West Tank Farms, and CPO will perform facility-specific or project-specific duties and provide field implementation of programs. Those assigned to the core group will focus on activities having a TWRS-wide or programmatic focus. Hanford-wide activities will be the responsibility of the Safety Center of Expertise. In order to ensure an effective and consistent safety program for TWRS under the new organization program functions, goals, organizational structure, roles, responsibilities, and path forward must be clearly established.

The purpose of the TWRS Safety Program Plan is to define the overall safety program, responsibilities, relationships, and communication linkages for safety personnel under the new structure. In addition, issues associated with reorganization transition are addressed, including training, project ownership, records management, and dissemination of equipment.

For the purpose of this document "TWRS Safety" refers to all safety professionals and technicians (Industrial Safety, Industrial Hygiene, Fire Protection, and Nuclear Safety) within the TWRS organization, regardless of their location in the organization.

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2.0 STANDARDS AND IMPLEMENTING POLICIES

2.1 DRIVING STANDARDS

The mission of Tank Waste Remediation Systems is to store, treat, and immobilize highly radioactive Hanford waste in a *safe, environmentally sound, and cost-effective manner* (WHC-SD-WM-MAR-008). TWRS Safety professionals are tasked with implementing and supporting the programs and applicable requirements of Industrial Safety, Industrial Hygiene, Fire Protection, and Nuclear Safety within TWRS to support this mission in accordance with requirements and regulations as set forth in the DOE-approved TWRS Standards/Requirements Identification Document (S/RID).

2.2 IMPLEMENTING POLICY

The implementing policy for the above standards is defined in Westinghouse Hanford Company Policies and Charters (WHC-CM-1), "Environment, Safety, and Health Policy". This policy outlines WHC's basic philosophy and commitment to safety. The Safety Philosophy and Commitment statements (below) provide a basis for TWRS Safety responsibilities, and give direction to what the overall organization is trying to achieve. Missions and visions of safety organizations within WHC stem from these ideals, and help to define the path forward for the TWRS Safety Program.

WHC Safety Philosophy

- *If its not safe, don't do it*
- *All occupational injuries and illnesses are preventable*
- *Safety is everyone's responsibility*
- *Working safely is a condition of employment*

WHC Commitment

- *Conduct all activities safely*
- *Comply with safety and environmental requirements*
- *Eliminate undue risk to people or the environment*

The TWRS Safety Charter (Section 2.3) includes the charter statement, authority, and overall responsibilities of TWRS Safety. The responsibilities and authority are general guidelines and apply to safety personnel in both the core and field organizations. The Core Safety Group provides coordination to ensure programs and activities are consistent throughout TWRS.

Specific Industrial Safety, Industrial Hygiene, Nuclear Safety, and Fire Protection programs and policies are further developed and defined in the following Westinghouse Hanford Manuals:

- Industrial Safety Manual (WHC-CM-1-10)
- Fire Protection Manual (WHC-CM-4-41)
- Nuclear Criticality Safety Manual (WHC-CM-4-29)
- Safety Analysis Manual (WHC-CM-4-46)
- Industrial Hygiene Manuals (WHC-CM-1-11 and WHC-CM-4-40). Manual WHC-CM-4-40 will be incorporated into WHC-CM-1-11 during 1996.
- Safety Department Administrative Manual (WHC-IP-0030)

While it is not expected that any WHC requirements conflict with the TWRS S/RID, in such a case, the S/RID governs.

2.3 TWRS SAFETY CHARTER

2.3.1 Charter Statement

The TWRS Safety organization (core, East, West, and CPO) provides professional safety services to the TWRS Project through integration, oversight, and support to create and maintain a safe and healthy working environment while achieving success in the characterization, treatment, storage, and disposal of waste. Through identifying, evaluating, and controlling risk, the safety, protection, and well-being of personnel will be managed at acceptable levels in compliance with appropriate Federal, DOE, State, and local statutes, regulations, orders, and contractual obligations.

2.3.2 TWRS Safety Responsibilities

TWRS Safety is responsible for maintaining an organization staffed and qualified to implement the requirements and/or recommended practices based on the U.S. Department of Energy (DOE) 5400 and 5480 Order series, WHC Safety Requirements, Safety Basis documents, and the applicable sections of the Hanford Site Management Systems plans and documents (i.e. Fiscal Year Workplans and TWRS Multi-Year Program Plan). To fulfill this responsibility, TWRS Safety is responsible for the following:

1) Provide safety and health expertise, assistance and support for TWRS operations and activities.

   (a) Anticipate hazards through independent safety review and approval of safety documentation (plans, procedures, new or modified designs, safety analyses, work packages, purchase requisitions, safety requirements) prepared by WHC, Project A/E's, and sub-contractors. Make recommendations to management regarding appropriate controls for anticipated hazards.

   (b) Provide guidance, consultation, and interpretation of safety related orders, national standards, design criteria, and implementing programs and procedures.

   (c) Assist TWRS management with development and implementation of health, safety, nuclear, and fire protection plans, systems, controls, procedures, and training, and conduct hazard evaluations, risk analyses, and self-assessments.

   (d) Participate in safety integration activities such as safety councils, lessons learned, task teams, and awareness activities to promote safety and health implementation and performance.

   (e) Provide guidance, review, and approval in the development of permits (i.e., Job Hazard Analysis, Confined Space Entry, Excavation, and Asbestos).

(f) Provide technical expertise to assist in the preparation of accident/incident investigation reports.

(g) Provide consultation to TWRS on all aspects of tank waste remediation efforts upon request.

2) Provide Industrial Hygiene and Safety technical assistance and support through qualitative and quantitative assessments.

(a) Ensure safety and health records are properly maintained, coordination between organizations and subcontractors occurs, employees and subcontractors are notified of results of inspections, industrial hygiene monitoring is provided, and applicable investigations are performed.

(b) Assist in the procurement of services for health and safety engineering, chemical exposure monitoring, respiratory protection, and safety training. Anticipate chemical exposures through procurement request review of all hazardous chemicals.

3) Monitor TWRS safety and health to assess program effectiveness and define performance and trends.

(a) Participate in audits, appraisals, inspections, and surveillances of plant facilities, operations, subcontractor activities, and equipment to assess compliance to established standards and requirements.

(b) As appropriate, resolve complaints, employee concerns, and adverse conditions related to safety and health through advice, investigations, and/or direct resolution.

(c) Prepare and issue summary reports and trend analyses.

4) Provide Nuclear Safety expertise, assistance, oversight, and support for TWRS operations and activities.

(a) Ensure waste tank and support facilities have instituted an effective Unreviewed Safety Question (USQ) Program.

(b) Ensure waste tank facilities have a current and adequately defined safety bases.

(c) Provide an independent determination of whether a proposed nuclear activity involves an USQ.

(d) Participate in readiness reviews.

(e) Ensure Technical Safety Requirements TSRs (currently operational safety requirements (OSRs)) are effectively implemented.

(f) Ensure that nuclear criticality safety is maintained in TWRS operations.

(g) Provide direct support in the implementation and development of the TWRS Final Safety Analysis Report which complies with DOE Order 5480.23, *Nuclear Safety Analysis Reports*.

5) Administer programs to control and minimize health and safety hazards and promote continuous improvement in health and safety performance throughout TWRS operations.

(a) Advise management of the resources (personnel, budget, equipment, time,) needed to maintain an adequate safety program.

(b) If authorized, conduct research and development in areas essential or beneficial to the TWRS Safety program and submit the results for peer evaluation and publication.

(c) Coordinate the safety program and provide support to the programs of other TWRS and Safety departments; maintain a professional rapport with these departments.

(d) Prescribe appropriate hazard prevention and control measures, and interpret data to assess and define acceptable levels of worker exposure to potentially hazardous materials or conditions.

(e) Interface, as needed, with on-site contractors, subcontractors, and DOE-RL on safety-related issues.

2.3.3 TWRS Safety Authority

TWRS Safety authority includes: 1) access to records, information, property or plans to form good industrial safety, industrial hygiene, and nuclear safety judgements; and 2) physical access to all areas of the site to perform surveys, inspections, or other industrial safety and health related activities. This includes access to management to recommend adopting policies or actions deemed necessary or desirable for achieving the objective of the program. (*NOTE: TWRS Safety personnel will abide by the special qualifications or training requirements for entry into controlled areas.*)

In addition, TWRS Safety has the authority to assess the compliance of TWRS organizations, operations, and facilities, and subcontractor activities with health and safety standards, to identify and document deficiencies that require corrective actions, and to follow-up for assurance that corrective actions are taken. If imminent danger exists, TWRS Safety staff, like all employees, are authorized to direct that activities be stopped until the issues are resolved.

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3.0 MAJOR PROGRAM ELEMENTS

Safety professionals for TWRS are tasked with the responsibility of establishing a safe worksite through a combination of work controls, monitoring, and communication which are focused on achieving TWRS objectives cost effectively, safety, and in compliance with established WHC requirements. The essential functions of the TWRS Safety Program include:

- Hazard Assessment/Identification
- Hazard Prevention and Control
- Recordkeeping
- Safety Awareness and Promotion
- Safety Integration
- Program Implementation

These elements are described in the following subsections.

3.1 HAZARD ASSESSMENT/IDENTIFICATION

The purpose of hazard assessments in the work place is to qualitatively and quantitatively evaluate the extent of exposure and effectiveness of control of occupational safety and health hazards. This is required by DOE, OSHA and good industrial hygiene and safety practices. Hazard assessments will be performed or assisted by a member of TWRS Safety and include the following:

1) Analysis of new operations, processes, materials, or equipment before initial use to determine potential hazards. These analyses will be performed in conjunction with Procurement, and the TWRS Engineering and Operations organizations.

2) Analysis of any changes in operations, processes, materials, control equipment, work practices or personnel that have the potential to cause new or additional hazardous exposures.

3) Comprehensive Baseline Hazard Assessments (CBHA) of all areas and operations identified as having occupational health and safety hazards. CBHA's are a systematic approach to identify work place hazards, evaluate controls and their effectiveness, and verify implementation of applicable safety and health requirements within a facility. Facilities are reviewed by an integrated team potentially consisting of Industrial Safety, Industrial Hygiene, Fire Protection, Health Physics, Operations, and Safety Council Members.

4) A comprehensive, qualitative characterization of the work place to recognize significant potential physical, biological, and ergonomic exposures to workers. Results of the analyses, professional judgement, and trends identified through the characterization process will be used for prioritizing program emphasis, identifying

further studies using the Qualitative Exposure Assessment Program (EAP), and establishing an industrial hygiene monitoring schedule.

The preliminary qualitative review of the EAP consists of a survey of an organization. The survey defines, through an inventory of stressors and time within a workscope, how personnel are rated in respect to risk. The exposure group is then defined and a risk assessment assigned. An EAP and industrial hygiene monitoring schedule using a graded approach is then completed.

5) Quantitative monitoring of potentially hazardous exposures:

   (a) Personal monitoring and sampling will be performed using breathing zone samples that reflect the 8 hour Time Weighted Average, Short Term Exposure Limit, or Ceiling exposure of employees as appropriate. Sampling and analysis will be done in accordance with sampling and analytical methods specified by OSHA or NIOSH. Analysis will be by a laboratory accredited by the American Industrial Hygiene Association for the general class of hazardous substance being analyzed.

   (b) Source Monitoring identifies potential sources of personnel exposure.

   (c) Area Monitoring is used to determine exposure levels in the general work environment. If a worker's pattern of potential exposure is well-defined, then knowledge of a worker's activity is sufficient to estimate exposure. Since this is not the case in tank farms, this is a qualitative tool that is a part of a complete monitoring program. Area monitoring may be used as one of the indicators to determine personnel monitoring requirements.

6) Specific program audits, surveillances and self-assessments (i.e., crane safety, electrical safety, hazard communication) conducted to comprehensively review implementation and effectiveness of safety programs.

7) Evaluation of compliance with safety, health, and fire protection requirements through both scheduled and unannounced field surveys of the work place.

3.2 HAZARD PREVENTION AND CONTROL

The purpose of hazard prevention and control is to eliminate or minimize exposures or risk to occupational safety and health hazards identified in the work place. This is accomplished through substitution, engineering controls, use of work practice controls, personal protective equipment, or administrative controls. TWRS Safety will inform facility management of the

control measures required to reduce risk or exposure. Control measures are recommended in accordance with the following hierarchy:

1) Changing the process to a less hazardous process or substituting the hazardous material with a less hazardous material.

2) Isolating or enclosing the process or operation.

3) Implementing engineering controls (i.e., ventilation, installation of sound absorbing material, etc.).

4) Using administrative controls such as work practices or procedures (i.e. limited access or rotating personnel to minimize exposure).

5) Using personal protective equipment:

   (a) Use of respiratory protection during the time period necessary to install, evaluate, or repair engineering controls.

   (b) Use of personal protective equipment in work situations such as maintenance and repair activities in which engineering controls are not feasible.

   (c) Use of personal protective equipment in work situations in which engineering controls and supplemental work practice controls are insufficient.

   (d) Use of personal protective equipment in emergencies.

Review of control effectiveness usually occurs during the hazard assessment phase of the baseline, special, or annual surveys. In addition to the traditional controls described above, control of the workers' behavior through procedures, awareness training, and discipline in work performance is also necessary. Not all controls can be implemented immediately and remain within budgetary constraints of operations and site support organizations. Using CBHA risk assessment codes (RAC's), as specified in the CBHA procedure, management can utilize probability and frequency determinations as criteria matched against the hazard severity for hazard abatement.

3.3 RECORDKEEPING

Development and maintenance of written hazard assessment and control records is essential for a comprehensive program. Written records document the operations description and the results of hazard assessments, including references to other documents used in the characterization of the work place, facility or employee task. They can also be used to inform the staff of previous studies or findings, determine trends, and validate effectiveness of controls. Complete, accurate, and retrievable documentation is essential to provide proof of hazard control.

TWRS Safety will ensure that hazard assessment, control, and site survey records are accurate, complete, factual and in accordance with site documentation standards. Conclusions and recommendations must be communicated to the appropriate facility management and affected personnel for corrective actions. Exposure monitoring results must be provided to affected employees within 15 days of receipt of analysis results per WHC-CM-4-40, Section 4.4, "Workplace Hazards Monitoring Requirements."

As outlined in the OSHA Field Operating Manual, hazard assessment and control records should include the following:

1) Description of the operation, facility, or task and the results of the hazard assessment, including references to all documentation used to assist in characterization of potential hazards.

2) Exposure monitoring records will identify employees considered to be representative of the task being monitored. Records should also include: location, date, duration, and number of samples taken; description of procedures used to determine representative sampling; description of sampling and analytical methods used; and a notation of any conditions that may have influenced the sampling results.

3) A description of the specific means of compliance with applicable DOE prescribed orders, OSHA and WHC requirements.

4) A description of the control technology in place, to be installed, or that was considered, but not implemented. A schedule of abatement control measures should be recorded.

5) A progress report to affected organizations and DOE for the implementation of hazard prevention and control measures.

6) For those work operations and facilities which do not represent a hazardous exposure, the following should be provided to the affected organization:

   (a) Description of any operation and results of the hazard assessment, including reference to documentation used in the characterization and unique identifiers for all employees assigned to the operation, and

   (b) Available exposure monitoring records that contain the information listed in (2) above.

Field data generated by industrial hygiene technicians or plant industrial hygienists are reviewed for accuracy, completeness, and signed off by the TWRS Industrial Hygienist responsible for the facility or activity. Once reviewed, it is entered into a database, reported to the organization and employees monitored, as applicable, and then submitted to Industrial Hygiene Central Safety Group or filed with TWRS Safety according to type of form, survey, or

site area. Inspection reports will be generated as the surveys are conducted and trends will be identified quarterly.

3.4 SAFETY AWARENESS AND PROMOTION

Employee accountability for safety in their workplace is established through effective safety awareness and promotion. Awareness of safety and health issues is maintained by effective communication between management and employees, and by getting the employees involved in safety programs. It is also promoted through employee recognition awards for safety involvement, which are handled primarily through the safety councils. The following subsections describe some of the methods used to maintain safety awareness and promote safety in the workplace.

3.4.1 Safety Councils

Each TWRS employee is represented on one of the nine Employee Accident Prevention Councils, based on their organization and work area. The purpose of the safety councils is to increase safety knowledge and awareness and instill safety values through employee participation. The councils are run by the employees, and allow direct employee involvement in safety activities and initiatives such as housekeeping inspections, safety improvements, scheduling safety meetings, and communication/awareness activities. Some recent examples of safety council accomplishments include participation in the 1996 Safety Expo, initiating and performing personnel safety work package trending, initiating walkway, stair, and lighting improvements, and promoting seat belt usage. The safety councils foster information exchange by providing a forum for safety concerns to be voiced, potential solutions addressed, and safety statistics provided to employees. In addition, the councils sponsor employee recognition awards for excellence in safety and outstanding participation in safety activities. Additional training for council members is presently being provided in order to promote more council involvement in fundamental safety issues such as hazard recognition.

3.4.2 Safety Meetings

Safety meetings are held each month for all TWRS employees. The meetings promote safety by addressing a different health or safety topic each month, including information on basic issues, control methods, and established programs. Employees are encouraged to ask questions and participate in each meeting by sharing their ideas on safety issues. The employee safety councils are responsible for scheduling the meetings, and making work team assignments for sponsoring/developing the monthly meetings. It is an expectation within TWRS to attain 100% attendance at the safety meetings each month.

3.4.3 Lessons Learned

Communication of important safety information is also provided through the lessons learned program. Safety notices of lessons learned are published and distributed to facilities to inform personnel of accidents or events that could potentially have a direct bearing on their workplace. The bulletins are based on items from within TWRS, areas around the Hanford site, and from external DOE and commercial sites, and include information on how similar incidents could be prevented in the future. Section 5.3 contains additional information on the TWRS Safety interface with the lessons learned program.

3.4.4 Training

Training is the main method of communication of safety information. Training requirements are established for each employee, based on the type of work, work area, and potential exposure to various hazards. The requirements follow the precepts of the OSHA safety and health management guidelines and the implementation strategy of the site Voluntary Protection Program, and are provided in the *Tank Farm Health and Safety Plan* (HASP) (WHC-SD-WM-HSP-002), Section 3, "Training," and the *TWRS Administration Manual* (WHC-IP-0842), Volume III, "Training". TWRS Safety participates in the process by developing and providing training on health and safety issues, and by ensuring safety professionals remain cognizant of current issues and changes/revisions to programs and requirements. Some examples of training recently developed and provided to TWRS personnel include Fall Protection, requirement changes in the Industrial Safety Manual (WHC-CM-1-10), and Heat Stress. In addition, every manager is required to attend Management Safety Training every year. Required training for each employee is identified in the Training Matrix (TMX) System.

3.4.4.1 TWRS Personnel Training

TWRS Safety recommends training to line managers on occupational safety and health hazards and methods available to control exposure associated with various jobs. Employees are trained in the details of the industrial safety, fire protection, and industrial hygiene programs and in the safety and health hazards associated with any job-related hazardous exposure. Required Reading Programs are also in place for each line organization to ensure employees are kept current on pertinent issues such as manual updates, lessons learned, and other safety related information.

3.4.4.2 Safety Professional Training

TWRS Safety staff are trained in the anticipation, recognition, evaluation, and control of risk to ensure a level of competency to protect worker health and safety and implement all applicable provisions of draft DOE Order 5480.10A, *Contractor Industrial Hygiene Program*, DOE Order 5483.1A, *Contractor Industrial Safety Program*, DOE Order 5480.7A, *Fire Protection Program*, and DOE 5480.5, *Safety of Nuclear Facilities*.

TWRS Safety provides the necessary support required to maintain and enhance staff proficiency through continuing required site training and professional development. Professional Development Plans are developed for TWRS safety professionals and technicians by their line management. The plans describe the courses or seminars suggested for each staff member to enhance his/her growth as a professional during the year. Records showing individuals' training and qualifications are maintained by the organization management.

3.5 SAFETY INTEGRATION

Safety Integration will occur through ownership and accountability within all levels and departments of the TWRS organization. Visibility and participation at scheduled meetings and interfacing with key planning organizations is an essential element in safety involvement. Innovative awareness activities, reports of safety performance, and field presence encourage integration. This Program Plan serves as a vehicle whereby TWRS Safety for East, West, CPO, and the 222S labs have an opportunity to establish a concerted effort to support TWRS Safety. The establishment of goals and objectives whereby we can achieve success as a unified effort are presented within the contents of this Plan.

3.6 PROGRAM IMPLEMENTATION

The purpose of program implementation is to ensure applicable requirements, regulations, and good safety principles are applied in the work place, including daily work activities in the office or field and associated planning and follow-up activities. It involves developing and implementing training, providing guidance to employees in the basic principles of safety programs, performing hazard assessments and controls, and performing inspections and document reviews to ensure those principles are applied. Descriptions of some of the safety programs currently being emphasized within TWRS are provided in Section 8.0, under the path forward for each group.

3.7 SPECIAL PROGRAMS

The following subsections outline special programs TWRS Safety is participating in to enhance the safety program.

3.7.1 DOE Voluntary Protection Program (VPP)

The DOE VPP is a recognition program built on the OSHA Safety and Health Program Management Guidelines which represent a model for a proven effective safety program. WHC applied for merit status under the VPP in March 1994 by submitting an application which outlines the site initiatives that meet the criteria in the VPP guidelines. Further information was requested by the committee, which was resubmitted in December 1994. To advance the VPP principles within TWRS, a VPP steering committee is actively pursuing awareness, education, and integration initiatives. To prepare for the DOE-RL

Starbase Hanford program, an application for local VPP recognition for TWRS facilities will be prepared and submitted during 1997.

3.7.2 Reduction of Worker Risk through Enhanced Work Planning

A pilot in 1995 for West Tank Farms was designed to test and demonstrate basic capabilities and practices that identify, address, and provide feedback on experience with work place hazards as part of a routine work planning process. TWRS Safety provided technical services to support this program. During 1996, this program was expanded to fit into the West Tank Farm Re-Engineering model for work planning and is being tested within East Tank Farms for decontamination work.

3.7.3 Occupational Safety and Health Standards/Requirements Identification Document (OSH S/RID)

The Defense Nuclear Facilities Safety Board (DNFSB) issued Recommendation 90-2 which recommended that the DOE 1) identify specific standards applicable to the design, construction, operation, and decommissioning of defense nuclear facilities; 2) assess the adequacy of these standards for ensuring public health and safety; and 3) for those standards that have been implemented, assess the extent of compliance.

Tank Farms has developed an S/RID. The OSH S/RID document, approved by DOE-RL in February 1996, identifies the facility and site level requirements in each of 19 functional areas necessary for protecting the health and safety of the public, the workers, and the environment. (The S/RID does not cover the 222S laboratories.) A Phase I assessment of the OSH S/RID involved reviewing TWRS and WHC documentation for compliance with identified regulations, and was completed by TWRS Safety on March 31, 1996. Phase II is a field assessment of compliance, and is anticipated to be conducted during CY96. Clarification of issues and responsibilities arising from the assessments will be addressed in CY96.

3.7.4 Management Assessment Program

The TWRS Management Assessment Program was developed in accordance with Title 10 CFR 830.120, which requires managers to assess their management process. The program is designed to integrate assessment schedules and use resulting assessment data from programs such as Operations and Maintenance Champions, management observations, surveillances, and assessments to provide the means for effective trending analysis. This optimizes continuous improvements in safety, quality, and operational efficiency throughout TWRS activities. TWRS Safety and Quality Assurance provides oversight of the TWRS Management Assessment Program, and assists managers in ensuring duplication of assessments is eliminated. TWRS Safety personnel participate in assessments as requested.

3.7.5 Facility Evaluation Board (FEB)

Facility Evaluation has been established to perform all WHC independent oversight using Facility Evaluation Boards (FEB). The FEB provides WHC facility and senior management with accurate, timely, and consistent information to measure a facility's effectiveness in completing its mission while assuring adherence to applicable conduct-of-operations, environmental, safety, health, and quality assurance requirements. Information is obtained through performance-based independent assessments of WHC facilities, direct support activities, and a comprehensive review of the facility's own self-assessment process. In addition, Facility Evaluation will ensure that other independent assessments, required by regulation or contract requirements, are performed. TWRS Safety personnel assist FEB members with facility assessments.

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4.0 ORGANIZATIONAL STRUCTURE AND RESPONSIBILITIES

4.1 MANAGEMENT STRUCTURE

Safety responsibilities are carried out at three levels for TWRS. The Safety Center of Expertise (COE) maintains a site-wide (Hanford) perspective, responsible for development and maintenance of company manuals, and acting as the interpretive authority for requirements and regulations. The TWRS Safety Core group implements safety policies and programs at a TWRS-wide level, and helps coordinate facility-wide activities. Field safety personnel (within East and West Tank Farm Projects) provide safety support to all facility-level activities. Field safety personnel within CPO provide safety support to all 222S, WSCF, and SAS laboratory facility-level (Analytical Services Safety) and sampling (Characterization Project Safety) activities conducted at the Tank Farms.

4.1.1 Field Safety Groups (East, West, CPO)

Field-level personnel report directly through the operations management chain in each area. These are East Tank Farms Safety and Quality Support under East Tank Farm Projects and Environmental, Radiological, and Safety Support under West Tank Farm Projects. Both support organizations are matrixed to TWRS Safety and Quality Assurance. CPO safety professionals report to CPO Safety and Quality Assurance, as part of the CPO line organization.

The field safety groups will provide technical safety support at the field level. The field-level safety professionals will support the facilities in: implementation of programs; mentor operational teams in hazard recognition; support site specific document review (work packages, procedures, JHAs, and project documentation), but more importantly assure that safety is initially built into each document; perform facility inspections/walkdowns; and provide general site safety support such as IH field monitoring, providing guidance on training and safety issues, and assisting with assessments.

The field-level safety professionals will be responsible for the activities listed below. Discipline specific activities are shown in Section 4.2., Qualifications and Responsibilities.

- Provide facility or Characterization Project-specific safety training and Hanford safety program training
- Participate in development/review of facility-specific or Characterization Project-specific procedures, work packages, support documentation, and design reviews and projects
- Participate in field-level Operational Readiness Reviews (ORR's)
- Perform hazard evaluations (including inspections, surveys, and walkdowns)
- Assist management with incident/accident investigations
- Participate in lessons learned evaluations, and communicate information to TWRS Safety core group

- Provide facility-specific or Characterization Project-specific information as necessary to support the TWRS Safety Core group (for reports, trending, HASP updates, etc.)
- Provide input/participate in monthly safety meetings
- Provide representatives as requested to internal committees (PRC, Safety Councils, OAC)
- Assist in performing baseline and other applicable assessments
- Assist management in implementation of TWRS Safety programs at the facility and Characterization Project levels
- Interface with internal organizations on safety activities specific to TWRS facilities

4.1.2 TWRS Safety Core Group

Core group personnel report to the TWRS Safety Manager, under TWRS Safety and Quality Assurance. TWRS Safety and Quality Assurance and TWRS Safety are part of the Engineering line management.

The TWRS Safety Core Group will coordinate development of program implementation strategies; act as an interface with external organizations; coordinate facility-wide or programmatic safety activities; and provide fire protection engineering services to all TWRS facilities. The core group will also perform facility-wide safety oversight functions in the areas of data trending, report coordination and development, and records management.

The TWRS Safety Core Group will take the lead role in the activities listed below. Discipline specific activities are shown in Section 4.2., Qualifications and Responsibilities.

- Coordinate workable implementation strategies and impacts for COE
- Develop TWRS-wide training on safety programs, issues, and topics
- Participate in development and review of TWRS-wide documents and procedures (FSAR, S/RID's, Safety documents)
- Maintain the Tank Farm Health and Safety Plan (HASP)
- Act as the Occupational Safety and Health S/RID and Fire Protection S/RID functional area owner, and perform associated assessments as necessary
- Coordinate facility-wide project activities
- Coordinate and perform baseline assessments
- Assist with investigations of programmatic issues (e.g. investigation of problem areas identified by trending)
- Coordinate TWRS-wide reports (Quarterly to DOE-RL and TWRS Management)
- Perform trending and develop and maintain performance indicators
- Disseminate pertinent safety information to field organizations
- Maintain records (IH monitoring records, trending information) centrally with input provided by field groups
- Represent Tanks Farms and Engineering on the Safety Center of Expertise
- Provide representatives to internal committees (EAPC, VPP, PRC, SEAC, and the steering committee for Developing Operating Procedures)
- Interface with external organizations (Sub-TAP, DOE-RL, EH Mentors)
- Provide Safety Awareness Award Coordination

4.1.3 Safety Center of Expertise

The Safety COE is external to the TWRS organization, but is an integral part of the TWRS safety program. As previously stated, the Safety COE maintains a Hanford-wide focus, responsible for developing and maintaining company safety manuals and interfacing with regulatory agencies. This includes the development of overall safety programs which are implemented by core group and field personnel, and communication of new and revised requirements.

Attachment 1 depicts the management structure of the TWRS Division. Attachment 2 shows the TWRS Safety chain of command and personnel in Industrial Safety, Industrial Hygiene, Fire Protection, and Nuclear Safety. Communication charts for each safety discipline are provided as Attachments 3 - 6.

4.2 QUALIFICATIONS AND RESPONSIBILITIES (TWRS Safety Manager, Team Leaders, Industrial Hygiene, Industrial Safety, Fire Protection, Nuclear Safety)

4.2.1 TWRS Safety Managers (East/West/CPO/Core)

4.2.1.1 Qualifications

Safety Manager positions require a Bachelor of Science degree in engineering or science. Ten (10) years experience in a nuclear environment and at least 5 years of management experience are needed. In addition, the Managers must have a clear understanding of safety regulations and their relationships to nuclear and industrial safety and industrial hygiene, have excellent communication skills, and the ability to identify problems and develop possible courses of action.

4.2.1.2 Responsibilities

The Safety Managers provide management direction to the TWRS Safety program and professionals in support of the overall TWRS mission. This includes providing opportunities for effective integration and involvement of professionals from Industrial Safety and Fire Protection, Industrial Hygiene, and Nuclear Safety in daily Tank Farm activities to identify and control hazards, and ensuring that all applicable DOE orders and regulations are implemented. In this capacity, the manager ensures that there is an adequate number of professional staff in the various disciplines to carry out the organizational responsibilities outlined in the TWRS Safety Charter (Section 2.3.2), "TWRS Safety Responsibilities". The responsibilities listed below apply to Managers of East/Evaporator Safety and Quality, Environmental, Radiological, and Safety Support, CPO Safety and Quality, and the TWRS Safety Core Group Managers. Responsibilities that are not directly related to the TWRS Safety Program are not included.

- Implement and maintain risk management and safety awareness programs to establish a strong safety culture and to keep employees informed of and alert to methods for minimizing occupational health and safety risks.

- Assist Tank Farm facilities and activities in achieving safe and compliant operations. This is accomplished through the provisions of industrial hygiene, safety, nuclear safety, and fire protection expertise, assistance and services.

- Recommend programs to identify, control, and minimize or eliminate industrial, fire, nuclear, or recognizable health hazards.

- Provide health and safety services and support to the Safety COE for timely and effective resolution of safety incidents. This includes investigating and reporting health and safety incidents and concerns (as requested), maintaining appropriate health and safety records, trending and analyzing reports regarding health and safety experience, and directing or effectively recommending corrective and improvement actions.

- Interface as needed with on-site contractors, subcontractors, and DOE on Tank Farm safety and health related program implementation, experience, and records.

- Recommend specific safety goals and objectives for the group and measure the group's progress towards achievements.

- Develop professional staff expertise through supporting specific training and experience and attending and participating in continued education opportunities to maintain proficiency in the functional disciplines.

- Recommend program policy and guidance with advice provided by staff and senior management.

- Recommend scope, schedule, and budget to achieve excellence in TWRS Safety's functional responsibilities.

- Act as the Tank Farm Safety and Health Representative Supervisor, as described in the Tank Farm HASP.

4.2.2 Safety Team Leads (East/West/CPO)

4.2.2.1 Qualifications

TWRS Safety Team Leads must have a Bachelor of Science degree in occupational safety and health, fire protection, engineering, or a related field plus five (5) years experience, or equivalent education and experience. Professional certification in the Team Leaders' respective disciplines, where applicable, is an asset, but is not required. Knowledge and understanding of applicable regulations, orders, and standards, and how they apply to TWRS activities are a must, in addition to good communication and problem solving skills.

4.2.2.2 Responsibilities

Team Leads provide project leadership and technical expertise to safety professionals and technicians as they support the overall TWRS mission. This includes effective integration and involvement of safety professionals in daily Tank Farm activities to identify and control hazards, recommend effective corrective and improvement actions, and minimize occupational health, safety, and fire risks. Team Leads are responsible for safety integration, implementing safety and monitoring programs, maintaining program records, and providing subcontractor oversight.

In addition, Team Leads support personnel development by establishing training plans of continued education, experience opportunities, and specific training to meet the overall TWRS mission and commitment to safety. They also ensure personnel are trained, knowledgeable and capable of performing the job requirements, and maintain proficiency in their functional disciplines.

4.2.3 Industrial Hygiene Professionals and Technicians

4.2.3.1 Qualifications - Industrial Hygiene Professionals

Entry level requirements for an industrial hygienist include a Bachelor of Science Degree from an accredited college or university in engineering, chemistry, physics, medicine, or related biological science. Requirements for being a fully qualified Safety Professional include completion of the qualification program outlined in the *Safety Department Administrative Manual* (WHC-IP-0030), SAF-1.2, "Safety Personnel Qualification Procedure," and two years of related experience.

4.2.3.2 Industrial Hygiene Professional Responsibilities - General

The following are responsibilities of all TWRS Industrial Hygienists, regardless of their position in the organization structure. Specific duties associated with field and core team industrial hygiene personnel are listed separately.

- Evaluate and document potential exposures and assess effectiveness of control methods.
- Conduct surveys, assessments and self-assessments to identify, document, and evaluate potential work place health hazards.
- Communicate recommendations to line management and other support organizations to protect workers from chemical, physical, biological and ergonomic work stressors.
- Attend and participate in continuing education opportunities to maintain proficiency in the discipline.

- Recommend compliance strategies with current corporate and governmental regulations, and accepted industrial hygiene practice in all the areas of responsibilities listed. Industrial Hygienists must provide for the maintenance of adequate records of such surveys and inspections and for reporting the results to the appropriate personnel and other interested parties, and notify the organizations of any conditions observed requiring their attention.

- Implement and revise as needed a program for periodic survey and inspection of Tank Farm Transition Projects (TFTP), which covers both physical facilities, programs, procedures, and operations to identify and address any hazards, concerns, or undesirable conditions.

- Assist management with, and follow-up on investigations of accidents and incidents.

- Conduct field surveys of designated areas in response to requests or complaints from management, TWRS personnel, DOE, or other governmental regulatory agencies.

- Maintain records of inspections and surveys in order to report results and follow-up on compliance and corrective actions and to provide trend analyses to determine areas of concern and monitor performance indicators.

- Evaluate the adequacy of prescribed health and safety procedures and the levels of protection provided for the actual conditions in the field.

- Participate in multi-discipline safety reviews of designs and documents to assess compliance with mandated standards and recommended practices.

- Participate in pre-job planning through involvement in work site evaluations, job control documentation preparation and review, and pre-job briefings.

- Integrate and promote safety within TWRS, supporting TWRS safety councils, committees, and review boards.

4.2.3.3 Qualifications - Industrial Hygiene Technicians

Industrial Hygiene Technicians (IHTs) must have a high school diploma, and one (1) year of experience in health and safety related programs. An Associate of Arts/Sciences degree in Industrial Hygiene or related topic may be substituted for experience. IHT's must also pass all phases of a comprehensive training program as specified in the *Safety Department Administrative Manual* (WHC-IP-0030), TWRS-1.1, "TWRS Safety Industrial Hygiene Technician Qualification Plan," prior to working independently in the field.

4.2.3.4 IHT Responsibilities - General

The following are responsibilities of all TWRS IHTs, regardless of their location in the organization structure. Specific duties associated with field and core team industrial hygiene personnel are listed separately.

- Operate a variety of industrial hygiene direct reading instruments, including those used for detecting flammable gases, oxygen, total organic vapors, and specific chemical contaminants.
- Collect measurements for physical and chemical hazards such as noise, illumination, ventilation, chemical vapors, and gases.
- Perform routine industrial hygiene surveys to anticipate, identify, evaluate, and control potential health hazards.
- Record and compute monitoring and sampling measurements and results.
- Perform maintenance on instruments, including cleaning of parts and replacement of defective components.
- Respond to urgent health and safety concerns on an on-call basis.
- Work with TWRS schedulers and field personnel to provide industrial hygiene and safety field support for Tank Farm work activities, including daily demand work and special projects.
- Work with TWRS Safety professionals to help develop strategies for air monitoring and sampling, provide timely collection of data, submit monitoring summaries and reports, and communicate field issues that affect worker health and safety.
- Attend, support, and participate in the industrial hygiene and safety technologist training program in order to continually improve efficiency.

4.2.3.5 Core Team Industrial Hygiene Activities

- Implement the IH Technician Training Program
- Develop training for IH programs and site-wide issues
- Coordinate PIC training with TFTP Training organization
- Coordinate development of IH program implementation strategies
- Participate in development/perform IH review of TWRS-level documents (S/RIDs, FSAR)
- Review TWRS-wide procedures and project documentation
- Maintain the Tank Farm HASP
- Participate in technical safety issues/review (OSDs)
- Develop/distribute temperature extreme alerts
- Research/review potential new instrumentation/technologies
- Provide IH support services for TWRS administration (non-area specific personnel)

- Coordinate or assist in performance of baseline assessments (source monitoring, identification of personnel with exposure potential, and personal sampling)
- Perform IH trending
- Perform source sweeps
- Provide IH monitoring for CPO and Disposal organization activities
- Provide backup resources for field groups

4.2.3.6 Field Industrial Hygiene Activities

- Provide facility or Characterization Project-specific training on IH programs and issues
- Review maintenance and operating procedures and facility or Characterization Project-specific project documentation
- Provide IH input to work package planning and review (JHAs and job walkdowns)
- Perform Occupancy Readiness Reviews
- Participate in facility or Characterization Project-specific Operational Readiness Reviews
- Perform permitting activities/approval (asbestos, confined spaces)
- Assist with accident/incident investigations
- Prescribe respiratory protection
- Interact with IH Core group in baselining effort
- Maintain compliance program (source monitoring/personnel sampling)
- Perform breathing zone sampling and job-specific IH monitoring
- Interpret and report monitoring and sampling measurements and results
- Input monitoring data to database and perform data review
- Notify employees, their supervisors, and the TWRS Safety Core Group of personal monitoring results.
- Participate in facility safety councils and the OAC
- Participate in/provide input for monthly safety meetings
- Provide miscellaneous IH support (e.g. providing guidance on hygiene issues and resolving concerns)

4.2.4 Industrial Safety Professionals

4.2.4.1 Qualifications

Entry level requirements for an industrial safety (IS) professional include a Bachelor of Science degree from an accredited college or university in engineering or related scientific discipline. Requirements for being a fully qualified Safety Professional include completion of the qualification program outlined in the *Safety Department Administrative Manual* (WHC-IP-0030), SAF-1.2, "Safety Personnel Qualification Procedure," and two years of related experience.

4.2.4.2 Industrial Safety Professional Responsibilities - General

The following are responsibilities of all TWRS Industrial Safety professionals, regardless of their position in the organization structure. Specific duties associated with field and core team industrial safety personnel are listed separately.

- Inspect and evaluate plant facilities, operations, and equipment for compliance with and enforcement of applicable industrial safety codes, standards, and regulations.
- Assist management with, and follow-up on investigations of accidents and incidents.
- Conduct field surveys of designated areas in response to requests or complaints from management, TWRS personnel, DOE, or other governmental regulatory agencies.
- Maintain records of inspections and surveys in order to report results and follow-up on compliance and corrective actions and to provide trend analyses to determine areas of concern and monitor performance indicators.
- Evaluate the adequacy of prescribed health and safety procedures and the levels of protection provided for the actual conditions in the field.
- Participate in multi-discipline safety reviews of designs and documents to assess compliance with mandated standards and recommended practices.
- Participate in pre-job planning through involvement in work site evaluations, job control documentation preparation and review, and pre-job briefings.
- Integrate and promote safety within TWRS, supporting TWRS safety councils and committees and review boards, as requested.
- Act as a Site Safety and Health Representative as described in the Tank Farm HASP.

4.2.4.3 Core Team Industrial Safety Activities

- Develop training for IS programs and site-wide issues
- Coordinate PIC training with TFTP Training organization
- Coordinate development of IS program implementation strategies
- Participate in development/perform IS review of TWRS-level documents (S/RIDs, FSAR)
- Review TWRS-wide procedures and project documentation
- Maintain the Tank Farm HASP
- Perform independent Operational Readiness Reviews (ORR)
- Research/review potential new instrumentation/technologies

- Assist with investigations (e.g. investigation of problem areas identified by IS trending)
- Perform IS trending

4.2.4.4 Field Industrial Safety Activities

- Provide facility or Characterization Project-specific training on IS programs and issues
- Provide PIC training
- Review maintenance and operations procedures and facility or Characterization Project-specific project documentation
- Provide IS input to work package planning and review
- Perform Occupancy Readiness Reviews
- Participate in facility or Characterization Project-specific Operational Readiness Reviews
- Perform IS field surveys and construction site walkdowns
- Assist with accident/incident investigations
- Participate in facility safety councils and the OAC
- Participate in/provide input for monthly safety meetings
- Provide miscellaneous IS support (e.g. providing guidance on safety issues and resolving concerns)

4.2.5 Fire Protection Professionals

4.2.5.1 Qualifications

Entry level requirements for fire protection professionals include a Bachelor of Science Degree from an accredited college or university in engineering or related technical field. If not a graduate, six years of experience in fire protection engineering which demonstrate a working knowledge of fire protection principles and technical requirements may be substituted. Requirements for being a fully qualified Safety Professional include completion of the qualification program outlined in the *Safety Department Administrative Manual* (WHC-IP-0030), SAF-1.2, "Safety Personnel Qualification Procedure."

4.2.5.2 Fire Protection Responsibilities

All Fire Protection (FP) activities, both TWRS-wide and facility-specific, will be performed through the TWRS Safety Core group. Fire Protection responsibilities and activities include:

- Review engineered work packages, maintenance work packages, equipment specifications, project documentation, materials lists or other materials having fire protection implications.

- Review proposed changes to the functional use of buildings or structures to ensure "improved risk" criteria relating to conservation of life and property are maintained and upgraded.
- Review all work control documents impacting fire protection equipment or components.
- Provide an overview of the fire protection program that includes life safety and equipment testing, inspection, and maintenance program adequacy.
- Perform fire protection assessments to meet the requirements of DOE Order 5480.7A.
- Prepare area and/or facility Fire Hazards Analyses to comprehensively assess the risk from fire within individual fire areas in relation to existing or proposed fire protection.
- Act as a Site Safety and Health Representative as described in the Tank Farm HASP.
- Develop training for FP programs and site-wide issues
- Participate in development/perform FP review of TWRS-level documents (FHAs, S/RIDs, FSAR)
- Perform independent Operational Readiness Reviews (ORR)
- Participate in Occupancy Readiness Reviews
- Assist management with incident/accident investigations

4.2.6 Nuclear Safety Professionals

4.2.6.1 Qualifications

Entry level requirements for a nuclear safety (NS) professional include a Bachelor of Science Degree from an accredited college or university in engineering, chemistry, physics, or related science. Requirements for being a fully qualified Safety Professional include completion of the qualification program outlined in the *Safety Department Administrative Manual* (WHC-IP-0030), SAF-1.2, "Safety Personnel Qualification Procedure."

4.2.6.2 Nuclear Safety Responsibilities - General

Nuclear Safety personnel provide expertise, assistance, oversight, and support for TWRS operations and activities. The following are responsibilities of all TWRS Nuclear Safety professionals, regardless of their position in the

organization structure. Specific duties associated with field and core team nuclear safety personnel are listed separately.

- Review design and plant operating procedures and related documentation for nuclear safety issues, as required.
- Review work packages and related documentation as appropriate.
- Review and approve safety related documentation such as Interim Safety Basis documents (ISBs), Interim Operational Safety Requirements (IOSRs), Accelerated Safety Analysis Reports (ASAs), Technical Safety Requirements (TSRs) and Safety Assessment Reports (SARs).
- Assist waste tank facilities in maintaining an adequately defined safety basis.
- Provide an independent determination of whether a proposed nuclear activity involves an Unreviewed Safety Question (USQ).
- Participate in operational readiness reviews and assessments to verify that the waste tank safety aspects of the facility, staff, procedures, and technical safety bases for operation are in place and ready for the defined operation.
- Review operational safety requirements (OSRs) for implementation and recommend corrective actions as needed.
- Review nuclear criticality safety and validate it is maintained in TWRS operations.
- Monitor safety experience to assess performance levels and trends, and propose appropriate courses of action to improve the program.
- Verify nuclear facilities have instituted and continue to utilize an effective program for USQ determinations and analysis.
- Participate in and/or provide oversight of Accident Investigations of events of significance to nuclear/criticality safety.
- Investigate and respond to nuclear safety related employee concerns.
- Assist in determining or evaluating root causes of nuclear safety issues, and propose immediate and long-term corrective actions.
- Participate in safety councils, committees, and review boards, as required.
- Perform operations self-assessments and operational safety assessments, and participate in integrated audit appraisals.

4.2.6.3 Core Team Nuclear Safety Activities

- Participate on Oral Certification Boards (criticality, shift managers)
- Review TWRS-wide procedures and project documentation
- Participate in FSAR development/review
- Perform Operational Safety Assessments
- Support USQ process
- Participate in OSD to TSR conversion process
- Coordinate resolution of criticality safety issues
- Provide representatives to committees relating to nuclear safety (Defense Nuclear Facilities Safety Board (DNFSB), Plant Review Committee (PRC), Standard Review Committee, Engineering Standards Board, Hanford Personnel Dosimetry Advisory Council (HPDAC), and data review committees)

4.2.6.4 Field Nuclear Safety Activities

- Review maintenance and operating procedures and facility or Characterization Project-specific project documentation
- Provide NS input to work package planning and review
- Perform post-reviews of activity documentation
- Participate in facility or Characterization Project-specific Operational Readiness Reviews
- Participate in Conduct of Operations Self Assessments
- Perform facility or Characterization Project-specific USQ screenings
- Participate in OSD to TSR conversion and maintenance
- Provide representation as requested to PRC and Technical Review Group and Board
- Provide miscellaneous nuclear safety support (e.g. providing guidance on nuclear safety issues and performing walkdowns)

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5.0 PROGRAM INTERFACES

The following sections describe groups and organizations TWRS Safety interfaces with, provides support or information to, or participates in on a regular basis. TWRS Safety also interacts with other organizations when necessary for special projects. Program communication interface chains for Industrial Hygiene, Industrial Safety, Fire Protection, and Nuclear Safety Support are shown in Attachments 3 - 6.

5.1 SAFETY CENTER OF EXPERTISE (COE)

The Safety Center of Expertise is a board comprised of representatives from projects/teams throughout Hanford (TWRS, FFTF, SNF, PUREX, Solid Waste, and Construction Projects) to address site-wide safety issues. Central safety support groups provide expertise in Industrial Hygiene, Industrial Safety, Nuclear Safety, and Fire Protection and site-wide safety support functions. Attachment 7 shows the central support groups, who report to the Safety Director (Interpretive Authority for the Safety COE).

The Safety COE and support groups are responsible for program and procedure development for regulatory compliance within WHC, standard interpretation, maintaining safety manuals, supporting conflict resolution, developing site-wide training, and coordinating COE Board and safety discipline meetings. TWRS Safety assists in the development of procedures by providing input that will support practical implementation, reviewing documents initially and when revised, provide day-to-day interpretations of requirements, integrate requirements with planning and work teams, provide safety support and training to TWRS personnel, and provide expert guidance to the TWRS COE Representative.

Some of the site safety functions the COE support groups provide include initiatives for safety awareness, accident statistics and investigations, and developing safety performance reports. They also provide safety services (IH, IS, FP, NS) to those projects/facilities that do not support their own full time safety professional. Awareness activities include safety articles in the Hanford Reach, posters, and communiques. TWRS Safety provides information that may be of company-wide interest to the COE for publication, assists in and follows-up on TWRS accident investigations, and provides information regarding TWRS safety activities for performance reports.

The primary interface between TWRS Safety and the Safety COE Board is through the TWRS COE Representatives. The representatives attend COE Board meetings and disseminate appropriate information to TWRS Safety personnel. They carry information and ideas from the field and core safety personnel back to the COE. COE support staff work directly with TWRS Safety personnel when conducting investigations, or obtaining input on development of programs, procedures, and publications.

5.2 HANFORD ENVIRONMENTAL HEALTH FOUNDATION (HEHF)

HEHF has been contracted to provide medical surveillance. Pre-placement, periodic medical surveillance, and return to work or fitness for duty examinations are provided. TWRS Safety provides recommendations to applicable managers for personnel to be included in a medical surveillance program and data regarding health hazards in the workplace to HEHF. This data is based on hazards defined through assessments such as high noise, carcinogens, chemical exposure or temperature extremes.

5.3 TWRS LESSONS-LEARNED PROGRAM

The TWRS Project has a Lessons Learned Program and Coordinator to review incidents, activities and near-misses that may have value to the project in improving and correcting management systems. Lessons-learned bulletins are published and distributed to the working groups for information and action. TWRS Safety reviews the draft safety bulletins as subject matter experts for accuracy, compliance information, and lesson completeness prior to publishing. TWRS Safety also provides subject information to the TWRS Project Lessons-learned coordinator based on discoveries from reviews and oversight activities.

5.4 DOE-RL/HQ

TWRS Safety communicates and has a direct interface with the DOE-RL TWRS Program Office. The DOE Program Office is provided with status information of the TWRS Safety program through monthly meetings and a quarterly report. The quarterly report provides activities and status in meeting the Work Breakdown Structure (WBS) deliverables and program implementation. The deliverables established are a product of the joint effort in developing the fiscal year work plan. The work plan sets the overall direction and scope of the TWRS Safety organization. The TWRS Safety Core Group acts as the interface with DOE-RL for reporting purposes. DOE-RL staff work directly with TWRS Safety personnel in areas such as audits, assessments, and investigations.

The interface between TWRS Safety and DOE-HQ is through DOE-RL. TWRS Safety has been used in demonstration or special projects and has been involved in DOE-HQ reviews and assistance programs.

5.5 CORPORATE WESTINGHOUSE

The primary interface for communication, information and corporate surveys with Corporate Westinghouse Environmental Affairs is through the Safety COE. Information pertinent to implementation and the corporation is disseminated through this point of contact, and relayed to operations organizations through facility COE representatives. TWRS Safety participates in corporate reviews and in surveys.

5.6 DEFENSE NUCLEAR FACILITIES SAFETY BOARD (DNFSB)

The DNFSB is chartered by Congress to review and evaluate the content and implementation of the standards relating to the design, construction, operation, and decommissioning of defense nuclear facilities of the Department of Energy. The role of the board is to ensure adequate protection of public and worker health and safety and the environment at these facilities through site visits and assessments. TWRS Safety provides information to the Board through the DNFSB Point of Contact as required, and assists in resolving issues related to tank farm safety.

5.7 STATE AND FEDERAL REGULATORY AGENCIES

State and Federal regulatory agencies such as Occupational Safety and Health Administration (OSHA) provide direction and guidelines for worker safety. The Safety COE acts as the interpretive authority and interface with regulatory agencies. The COE disseminates information on new or revised regulations to facilities and makes appropriate changes to company-wide program manuals. TWRS Safety implements the requirements and revisions as necessary.

5.8 WORKER SAFETY AND HEALTH SUB-PANEL COMMITTEE (Sub-TAP)

The Worker Safety and Health Sub-Panel is a sub-committee of the High-Level Waste Tank Advisory Panel (TAP). The group, under contract through Battelle, PNL, is a group of renowned professionals chartered by DOE-RL to act as an advisory board on safety and health issues related to the TWRS Program. The committee is responsible for reviewing and making recommendations on issues related to the safety and health of workers associated with Tank Farm activities, waste handling, worksite hazards, hazard prevention and control, risk assessment methodology and application, training, and achieving VPP status. They also provide input as needed on new, updated, or revised orders, regulations, and requirements. The TWRS Safety Core Group, with input from field safety personnel, provides information (through presentations and the Sub-TAP point-of-contact) on current safety programs within TWRS, and implements committee recommendations.

5.9 HANFORD FIRE DEPARTMENT

The Hanford Fire Department provides fire suppression, emergency medical and ambulance services, special rescue support, hazardous material response, fire prevention and fire system testing and maintenance with the proficiency to control and terminate emergency situations that threaten the operations, employees, or interests of the DOE-operated Hanford Site. The fire safety prevention program includes fire protection system functional testing inspection and maintenance, self-contained breathing apparatus maintenance, building tours and inspections, and pre-fire planning. TWRS Fire Protection personnel provide engineering technical support to the Hanford Fire Department to assist with implementation of the fire protection program, fire investigations, and resolution of fire system discrepancies.

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6.0 RESOURCES

6.1 EQUIPMENT RESOURCES

Attachment 8 contains a listing of equipment available for use by TWRS Safety personnel, including equipment needed to perform inspections and air, noise, and light monitoring. All industrial hygiene monitoring equipment is owned, maintained, and calibrated by the IH Equipment Laboratory. However, air sampling equipment used on a daily basis by the IH technicians is stored and field calibrated by the technicians. Such equipment is identified on the attachment.

6.2 STAFFING

Currently within the TWRS Safety there are 24 exempt full-time employees (FTEs), 15 non-exempt, and 4 managers. Personnel are distributed among the field and core groups as shown in Table 6-1.

Table 6-1. TWRS Safety Staffing

	TWRS Safety (Core Group)	East/Evap SQ Support	West - Env, Rad, & Safety Support	West - Engineering Support	CPO Safety - Projects & Analytical Services
Administrative	1 Manager 1 Non-Exempt	1 Manager 1 Exempt 1 Non-Exempt	1 Manager 1 Non-Exempt		1 Manager 1 Exempt 1 Non-Exempt
Industrial Safety	2 Exempt	2 Exempt	2 Exempt		1 Exempt
Fire Protection	2 Exempt				
Industrial Hygiene	2 Exempt 4 Non-Exempt	1 Exempt 3 Non-Exempt	1 Exempt 4 Non-Exempt		2 Exempt
Nuclear Safety	2 Exempt	3 Exempt		1 Exempt	1 Exempt

6.3 BUDGET/WORK BREAKDOWN STRUCTURE (WBS)

Funding for TWRS Safety groups is directly through the line organizations. Field Safety groups are funded through Operations and CPO, while the TWRS Safety Core is funded through Engineering. Deliverables and scope of work for TWRS Safety personnel are defined in the approved Multi-Year Program Plan (MYPP).

Managers of each organization participate in the budget planning process for each fiscal year. Specific budget information and tracking is the responsibility of a Budget Analyst in each line organization.

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7.0 FY96 & FY97 PROGRAM GOALS, DELIVERABLES, AND IMPLEMENTATION SCHEDULES

7.1 TWRS SAFETY GOALS

The goals of the TWRS Safety organization were established to protect employees health and safety, maintain property, and safeguard the safety envelope. Goals were established (below), and strategies and action planning milestones were defined for managing the transition and developing a path forward in excellence.

- Continue to provide effective safety support services to TWRS in Industrial Safety, Fire Protection, Industrial Hygiene, and Nuclear Safety Support.
- Maintain effective packaging and presentation of staff accomplishments and studies to take credit for our demonstrated excellence.
- Clearly define and document the TWRS Safety Program to include responsibilities, accountability, and processes.
- Establish a sound Financial Plan which supports the program and field needs to support the safety and health functions of TWRS, and is supported by each professional.
- Develop a communication process to resolve difficult issues which affect health and safety.

7.2 DELIVERABLES

Deliverables are specifically associated with management of the cost accounts, assessing and assuring regulatory compliance, analysis of the work site and hazard identification and control. Most activities relate directly to implementation of the Westinghouse Hanford Company Worker Protection Program - the umbrella for the WHC occupational safety and health activities. Specific deliverables and activities for each group are provided in the paths forward (Section 8.0).

7.3 SAFETY PROGRAM IMPLEMENTATION PLANS/SCHEDULES

Implementation plans and schedules for each of the groups within TWRS Safety are defined in the path forward for each group (Section 8). These plans provide guidance and target dates to meet deliverable and milestone commitments. These tasks also represent significant events in program implementation and continuing improvement. Programmatic deficiencies will be identified from feedback provided by program audits, surveillances, self-assessments, etc. These program deficiencies will then be developed into tasks which will be added to the program implementation schedule. This will ensure focus, completion, and attention to recognized deficiencies. Narrative descriptions of various program elements and activities being emphasized in FY96/FY97 are contained in Section 8.

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8.0 PATH FORWARD

In order to achieve the goals set forth in Section 7, the path forward, or method of achieving those goals, must be defined. The path forward towards TWRS Safety excellence will be achieved through the definition deliverables and milestones, schedules for completion of those items, available resources (Section 6), and clear definitions of roles and responsibilities (Section 4). In addition, with the recent reorganization of the safety organization, transition issues are addressed in Section 9.

8.1 PROGRAM EMPHASIS

The following are descriptions of some of the health and safety programs and activities being emphasized during FY96 and FY97. All of the safety groups are involved in these activities/programs to some extent, whether it is program review, training development, program implementation, or field monitoring.

8.1.1 Document Review

Document review is a major element of all TWRS Safety professionals' responsibilities. Documents are reviewed and approved by professionals who ensure activities and operations will be carried out in a safe manner, ensure potential hazards are addressed in an appropriate manner, and make recommendations for resolving safety issues. The following is a partial listing of types of documents reviewed by Safety professionals. A more complete listing and matrix of who reviews them is provided in Attachment 9.

- Work packages[1, 2]
- Health & safety plans[1, 2]
- Readiness reviews[1]
- Program Plans[1, 2]
- Engineering/design changes[1, 2]
- Procedures[1, 2]
- Permits[1]
- Unreviewed Safety Questions[1, 2]

(1) East Tank Farms, West Tank Farms, CPO Activity
(2) Core Group Activity

8.1.2 Carcinogen Control Program

It is the policy of WHC to implement a Carcinogen Control program to maintain occupational exposure to carcinogens as low as reasonably achievable. Industrial Hygienists identify, evaluate, and effectively ensure control of all applicable carcinogens listed in OSHA 29 CFR 1910, the ACGIH TLV Handbook, National Toxicology Program, and the International Agency for Research on Cancer. The Carcinogen Control Program applies to operations where an industrial hygienist has determined that use of a carcinogen creates a reasonable potential for occupational exposures. Exposure shall be minimized by identification, evaluation, control, periodic review, and employee evaluation and medical monitoring in accordance with the *Industrial Hygiene Manual*, WHC-CM-4-40, 2.2 Carcinogen Control Program.

8.1.3 Hazard Communication

The Hazard Communication Program is a developing program within the COE IH Support Group. It has been proceduralized, initial training is present, and MSDSs are available for a majority of the chemicals on-site. This will be an area of focus for FY96/FY97 to ensure consistency of implementation within TWRS.

8.1.4 Lead Control

The lead control program is based on requirements of OSHA standards 29 CFR 1910.1025 and 1926.62. Implementation of lead control standards during FY96/FY97 includes developing necessary lead compliance plans, evaluating lead exposure potential, reviewing records and blood lead data, ensuring adequate personnel monitoring, and developing and conducting employee training.

8.1.5 Ergonomics

A program for ergonomics is in the development stage. Continuing worksite reviews for repetitive motion studies are currently being scheduled through the COE IH Support Group. A review of the current WHC program will be conducted during 1996, and IH technicians are being trained to conduct ergonomics assessments. In addition, ErgoSmart software has been made available to employees through the Hanford Local Area Network, for use on conducting their own workstation evaluations.

8.1.6 Noise/Hearing Conservation

An outline of the noise/hearing conservation program was issued into the *Industrial Hygiene Manual* (WHC-CM-4-40) in November, 1995. This program will be further developed during FY96. Baseline source monitoring is completed within TWRS, and initial audiometric testing is being performed. The Hearing Conservation Program and Survey Procedure will be released into the *Industrial Hygiene Manual* (WHC-CM-1-11) during FY96. Implementation and further development of the noise/hearing conservation program will include personnel monitoring and training of employees to increase awareness of the problem.

8.1.7 Confined Space

Confined Space is a mature program used to ensure employee safety when working in a confined space. A new WHC Confined Space Procedure was developed and issued during CY95, to be reviewed by Industrial Hygiene. The TWRS Confined Spaces Health and Safety Plan will also be reviewed during FY96.

8.1.8 Chemical Hygiene Plan

WHC Laboratories, including 222S and WSCF have developed and implemented Laboratory Chemical Hygiene Plans in accordance with 29 CFR 1910.1450. Current program emphasis is in supporting the required annual review. In addition, one of the Analytical Services path forward activities for this and next fiscal year is to perform an assessment of potential chemical exposures. This assessment will be done in accordance with the Chemical Hygiene Plan Exposure Monitoring requirements.

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8.2 TWRS SAFETY CORE GROUP PATH FORWARD

This section provides the TWRS Safety Core Group path forward activities to address key programs and issues. This path forward is based upon the general information provided in this TWRS Safety Program Plan, the current TWRS Safety work load, and a prioritization of issues that should be addressed in the near future. This section describes each TWRS Safety activity and provides an implementation plan/schedule for each (Attachments 10 - 14). Also included are Full Time Equivalent (FTE) estimates to better allow for plan modifications and prioritization.

8.2.1 Administration and Oversight Activities and Deliverables

The following shows the planned TWRS Safety core group administration activities and deliverables planned for the end of FY96 and FY97. Attachment 10 shows the implementation schedule for each activity.

1) Provide management and oversight of the TWRS Safety core group. (2.5 FTE)

2) Maintain a program plan for defining the TWRS Safety team, charter, goals, and objectives, and path forward. (Contract Support)

3) Provide quarterly and annual reports on status of deliverables, milestones, trends of OSHA findings, performance measures, trends, and program management to DOE-RL. (0.15 FTE)

4) Meet monthly with DOE-RL TWRS Tank Operations. (.05 FTE)

5) Develop and submit a Draft VPP Application for TWRS. (0.15 FTE)

6) Coordinate Safety COE issues as Requirements Representative for TWRS. (0.55 FTE)

7) Provide technical advisor on nuclear safety and criticality issues. (Contract Support)

8) Perform trending on industrial health and safety survey findings, ergonomic assessment findings, employee safety concerns, manager safety training, and safety meeting attendance. Report status quarterly. (Contract Support)

9) FY96 - Support special projects such as the Enhanced Work Planning Pilot Project.

8.2.2 Industrial Hygiene Activities and Deliverables

The following shows the planned TWRS Safety core group Industrial Hygiene activities and deliverables planned for the end of FY96 and FY97. Attachment 11 shows the implementation schedule for each activity.

1) Provide industrial hygiene program support: perform TWRS-wide document reviews, participate in special task teams, implement new/revised standards, and implement IH programs. (1.2 FTE)

2) Perform IH monitoring to support TWRS Operations activities, including responding to investigations, collecting data, maintaining IH equipment, field monitoring, supporting the respiratory protection program, and air cylinder sampling. (3.9 FTE)

3) Maintain Tank Farm Health and Safety Plan (HASP). Update as needed. (0.1 FTE)

4) Perform 72 source monitoring sweeps annually and report status quarterly. (0.25 FTE)

5) Develop an Industrial Hygiene Compliance Plan. (0.4 FTE)

6) Provide instruction/training assistance to field personnel as needed. (0.23 FTE)

7) Conduct 6 IH Assessments as a function of the Management Assessment Plan. (0.5 FTE)

8) FY96 - Support OSH S/RIDS efforts and assessments.

9) FY96 - Develop an on-going gas/vapor monitoring plan.

10) FY96 - Conduct three (3) sets of nitrous oxide (N_2O) monitoring for tanks known to emanate tank vapors.

11) FY96 - Implement the following programs, report status of each at monthly DOE-RL interface meetings and in quarterly reports to management:
    - Exposure Assessment Program (EAP)
    - Hazard Communication and Carcinogen Control Program
    - Heat and Cold Stress Program
    - Confined Space Program
    - Noise/Hearing Conservation Program
    - Asbestos/Synthetic Vitreous Fiber Program
    - Lead Control Program
    - Ergonomics Program
    - Non-Ionizing Radiation Program
    - Bloodborne Pathogens, Sanitation, Biohazard Program

8.2.3 Industrial Safety Activities and Deliverables

The following shows the planned TWRS Safety core group Industrial Safety activities and deliverables planned for the end of FY96 and FY97. Attachment 12 shows the implementation schedule for each activity.

1) Provide industrial safety program support. Perform TWRS-wide document reviews, participate in special task teams/councils, implement new and revised standards, implement IS programs, and develop/provide training on IS issues/topics. (0.48 FTE)

2) Develop Chapter 8 of the TWRS-FSAR and perform IS reviews of other TWRS-FSAR chapters. (0.08 FTE)

3) Provide IS oversight on ICF-KH work being performed on specific projects. (0.16 FTE)

4) Assist management with investigations as necessary. (0.1 FTE)

5) Assist with occupancy and operational readiness reviews. (0.07 FTE)

6) Conduct 6 IS assessments as a function of the Management Assessment Plan. (0.5 FTE)

7) Coordinate safety council activities for TWRS Safety

8.2.4 Fire Protection Activities and Deliverables

The following shows the planned TWRS Safety core group fire protection activities and deliverables planned for the end of FY96 and FY97. Attachment 13 shows the implementation schedule for each activity.

1) Provide fire protection program support. Perform TWRS-wide document reviews, participate in special task teams, implement new and revised standards, and implement FP programs. (0.7 FTE)

2) Perform and document Fire Protection Assessments as scheduled (approximately 20 per year). (0.65 FTE)

3) Participate in FHA development. (0.65 FTE)

4) Assist with operational/occupancy readiness reviews. (0.5 FTE)

5) Assess classification of locations to National Fire Protection Association criteria. (Contract Support)

8.2.5 Nuclear Safety Activities and Deliverables

The following shows the planned TWRS Safety core group activities and deliverables planned for FY97 and the end of FY96. Attachment 14 shows the implementation schedule for each activity.

1) Provide nuclear safety support to TWRS. This includes USQ support, participation in review boards and committees, resolution of criticality issues, etc. (0.9 FTE)

2) Participate in FSAR review and development process. (0.9 FTE)

3) Review TWRS-wide work packages, ECNs, designs, procedures, and related documents for nuclear safety issues. (1 FTE)

4) Provide nuclear safety support to specific projects. (0.75 FTE)

5) FY96 - Participate in 3 operational readiness reviews. (0.2 FTE)

6) FY96 - Develop FSAR Review Checklist.

7) FY96 - Complete approximately 8 operational safety assessments (OSAs).

8.2.6 Health and Safety Program Emphasis

As part of activities conducted during FY96 and planned activities for FY97, the TWRS Safety core group has had an emphasis on the programs below. The following provide a description of the program and the current status (development, implementation, and follow-up).

8.2.6.1 Vapor Monitoring

A vapor monitoring program of the personnel exposure from the tank farms is in progress. The program will be based on statistical analysis of historical data. Maintenance sampling will continue, with 72 samples scheduled to be gathered during FY96. The purpose of the program is to assess whether or not tank farm personnel are subjected to vapor contaminants above the occupational exposure levels, with high risk tasks and work locations targeted as high priority. Qualitative and quantitative assessments before and during tasks and tank content sampling and identification have increased confidence in the vapor program.

8.2.6.2 Temperature Extremes

A heat stress reduction program was initiated within TWRS for the summer of 1994 and revised for 1995. Initial review of the program's effectiveness indicates an increase in employee and management awareness as well as a reduction in heat stress illness cases. A heat stress task team was formed during the spring of 1996 to address heat stress issues prior to hot weather. The task team has reported on a variety of strategies for mitigating the potential for heat stress, and their feasibility. In addition to employee training, those strategies expected to be most effective were implemented during the summer of 1996. Review of the program will be made during and after hot weather months to determine its effectiveness in reducing heat stress, and make further improvements to the program.

A cold stress reduction program was initiated during the fall and winter of 1995 to increase employee awareness, and potentially reduce illness occurrences. Training on symptoms of cold stress and how to recognize them is provided to workers, warm shelters are provided, and stopping outdoor work when temperatures reach -25°F are several elements of the cold stress program. Follow-up will continue during the fall and winter of FY97.

8.2.6.3 Trending

Trending defines areas to highlight in safety awareness activities, audits, surveys, and self-assessments, and assists in providing focus to the TWRS Safety Program. This process can quantify program symptomatic weaknesses to help define root causes and identify safety management system deficiencies. Trending by the TWRS Safety core group is currently being conducted on:

- Industrial health and safety survey findings for East and West Areas;
- Ergonomic assessment findings for East and West Areas Tank Farms;
- Employee safety concerns for all of TWRS;
- Safety meeting attendance for TWRS (by organization); and
- Completion of Manager's Safety Training by TWRS Management.

8.2.6.4 Tank Farm Health and Safety Plan (HASP)

A HASP was developed to provide requirements and general guidelines to minimize health and safety risk to the workers and other personnel at the Tank Farms (WHC-SD-WM-HSP-002, *Tank Farm Health and Safety Plan*). Through the use of assessments such as the CBHA, the HASP will be revised to reflect current information and controls.

8.2.6.5 Non-ionizing Radiation Program

This program is currently in the development stages. Review of data of non-ionizing radiation and electro-magnetic fields and assessment of potential hazards from these fields will be performed during FY96.

8.2.6.6 Bloodborne Pathogens, Sanitation, Biohazard

The COE IH Support Group will be issuing a Bloodborne Pathogen Program Plan during FY96. TWRS Safety will review the plan, and assist in the implementation during the initial stages of the program, including training, investigation of employee concerns, and an evaluation.

8.2.6.7 Asbestos/Synthetic Vitreous Fibers (SVF) Program

This is a mature program for working around and controlling asbestos and SVF in the workplace. It is outlined in the *Industrial Hygiene Manual*, WHC-CM-4-40, Section 2, "Chemical Hazards." FY96 activities include review of new program documents and assessment of TWRS implementation of the program.

8.3 CHARACTERIZATION OPERATIONS (SAMPLING) PATH FORWARD

This section provides the Characterization Operations (Sampling) path forward activities. This path forward is based upon the general information provided in this TWRS Safety Program Plan, the current Characterization Operations work load, and a prioritization of issues that should be addressed in the near future. The Tables 8-1 and 8-2 provide objectives and activities associated with two main goals for the group; 1) Pro-actively establish compliance with 29 CFR 1910 and 29 CFR 1926 to program characterization personnel, and achieve excellence in our health and safety programs, and 2) Lower the injury/illness rate of characterization operations to no greater than the site goal of 0.85/200K hours worked. Due dates and actionees for each item are yet to be determined.

TABLE 8-1 GOAL - PRO-ACTIVELY ESTABLISH COMPLIANCE WITH 29 CFR 1910 AND 29 CFR 1926 TO PROTECT CHARACTERIZATION OPERATIONS PERSONNEL, ACHIEVE EXCELLENCE IN OUR HEALTH AND SAFETY PROGRAMS.

Objectives	Activities	Date Due	Status	Actionee(s)
1. To complete a baseline hazard assessment of all Char. Ops.	1. Perform a baseline hazard assessment (BHA) on each Characterization Operation. 2. Coordinate 10% of BHAs with DOE-RL to observe our performance of BHAs. 3. Compile a report of all baseline hazard assessments for Characterization Operations. 4. Develop corrective action plans in concert with the actionee(s) to address non-compliance issues revealed in the BHA. 5. Update the BHA annually.			
2. To conduct required annual IH monitoring.	1. Develop annual IH monitoring protocol based on BHA. 2. Assess FTE and equipment needs to perform all annual IH monitoring. 3. Adjust FTE and equipment needs to perform all annual IH monitoring. 4. Perform all annual IH monitoring. 5. Update the IH monitoring protocol based on the updated BHA.			
3. To perform required safety assessments	1. Periodic walk-throughs are performed by technical and management personal. 2. Review of proposed activities or modifications to existing operations. 3. Perform Hazard Analyses for seven sampling operations. 4. Conduct monthly field assessments.			

TABLE 8-1 (Cont) GOAL - PRO-ACTIVELY ESTABLISH COMPLIANCE WITH 29 CFR 1910 AND 29 CFR 1926 TO PROTECT CHARACTERIZATION OPERATIONS PERSONNEL, ACHIEVE EXCELLENCE IN OUR HEALTH AND SAFETY PROGRAMS.

Objectives	Activities	Date Due	Status	Actionee(s)
4. To implement Health and Safety Programs required by OSHA.	1. Prioritize based on BHA the health and safety programs to be implemented. 2. Implement in the field the top three programs from the prioritization. 3. Load program development and implementation in to future path forward.			
5. To evaluate recurring deficiencies.	1. Review all health and safety external and internal audit/assessment findings and accident/illness reports over the past two years, determining which findings are recurring. 2. Determine the root cause of the recurring findings. 3. Develop corrective action plans in concert with actionee(s) to address the determinations of this review.			
6. To prepare for future regulatory impacts.	1. Identify new standards or changes to existing standards that impact the health and safety of employees and compliance. 2. Assess the impact of the standards identified. 3. Develop action plans to address the impacts assessed.			

TABLE 8-2 GOAL - TO LOWER THE INJURY/ILLNESS RATE OF CHARACTERIZATION OPERATIONS TO NO GREATER THAN THE SITE GOAL OF 0.85/200K HOURS WORKED.

Objectives	Activities	Date Due	Status	Actionee(s)
1. Improve Char. Ops. Injury/Illness rate.	1. Assess the injuries/illness cases to identify trends. 2. Study the identified trends and report observations and recommendations. 3. Develop corrective action plans in concert with the actionee(s) for implementing the recommendations. 4. Assess the effectiveness of the corrective actions and identify any other trends contributing to the Injury/Illness rate.			
2. Involve the workforce in identifying hazards and corrective actions.	1. Coordinate Do-Rite on lifting. 2. Develop Safety Incentive program. 3. Implement Safety Incentive program. 4. Transition to Enhanced Work Planning method of Job Hazard Analysis.			
3. To cultivate and nurture a safety culture in the workforce.	1. Revitalize the Issues Council with a Safety focus. 2. Provide technical Health and Safety Support to the Council. 3. Provide tracking resources for issues and corrective actions from the Council. 4. Develop a plan to instill safety and compliance in every operation, everyday.			

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8.4 ANALYTICAL SERVICES SAFETY PATH FORWARD

This section provides the Analytical Services Safety path forward activities to address key programs and issues. This path forward is based upon the general information provided in this TWRS Safety Program Plan, the current Analytical Services Safety work load, and a prioritization of issues that should be addressed in the near future. There are seven actions identified in the Analytical Services Safety path forward. This section describes each action and provides an implementation plan/schedule for each. Also included are Full Time Equivalent (FTE) estimates to better allow for plan modifications and prioritization.

8.4.1 Funding and Current Workload

The funding for Analytical Services Safety personnel comes from Analytical Services. As a result, direct support of Analytical Services will continue to be the first priority. This section defines the major elements of the current workload and estimates the FTEs currently used. Most of this current workload is not expected to change.

Analytical Services Safety is responsible for 222S, WSCF, and SAS. This support is currently funded for 2.2 FTEs. This includes 1 FTE Industrial Hygiene, 1 FTE Industrial Safety, and 0.2 FTE for additional support. The current work load is estimated in Table 8-3. The projected baseline workload/schedule is provided in Attachment 15. This projected baseline assumes that the Reduce Safety Paperwork Review path forward activity is successfully implemented, resulting in approximately 0.3 FTE available for path forward activities (Section 8.3.2).

Table 8-3. Analytical Services Safety Current Workload

Current Workload	Activities Included	Current Estimated FTEs (2.2 FTEs Available)
Paperwork Reviews	Document reviews including "S" documents, JCSs, and procurement, associated personnel contacts and site visits	1.2
Line Management Requested Support	Committee support, informal field reviews, confined space monitoring, employee concerns, line management requested projects, accident injury investigations, and plan of the day work reviews	0.5
Required Program Reviews	Confined space, chemical hygiene plan	0.1
Staff Meetings /Training/Reports	Safety staff meetings, all Hanford training, and weekly, monthly, quarterly reports	0.2
Audit Support	Respond to audits, appraisals & surveillances	0.1
Nuclear Safety and Fire Protection Requested Support	Additional document review and on site support as requested	0.2
Total		2.3

As can be seen from the table, reviewing paperwork requires the largest amount of resources. The total estimated workload is greater than the 2.2 FTE funded, causing some activities to be deferred.

8.4.2 Path Forward Activities

This section describes each of the Analytical Services path forward activities and provides an implementation plan and schedule. Attachment 16 provides the schedules for each activity, including FTEs. Attachment 17 provides a summary of all FTE information.

The seven Analytical Services path forward activities currently scheduled are:

1) Reduce Safety Paperwork Reviews
2) Support Ergonomic Evaluations for Non-office Situations
3) Support the Lock & Tag Pilot Program
4) Evaluate Recurring Deficiencies
5) Perform AS Facility Baseline Evaluations
6) Establish IH Monitoring Protocols
7) Implement the New Hazard Communication Standard

8.4.2.1 Reduce Safety Paperwork Reviews

Reducing paperwork reviews is the key Analytical Services path forward activity for 1996. Currently over half of the available FTEs for Analytical Services Safety is spent reviewing paperwork and the associated communications and site visits supporting these reviews. In evaluating the other current activities, it is apparent that there is little room elsewhere to make additional time available to support path forward activities. If this activity is successful, it is estimated that 0.3 FTE may be available for other path forward activities.

Methods that will be evaluated and implemented as appropriate include finalizing a matrix to help engineers and document control personnel properly screen documents to determine the need for safety review in accordance with WHC-CM-3-5 criteria, training appropriate personnel, and evaluating procurement requirements to determine the acceptability for blanket authorizations for certain store stock items.

8.4.2.2 Support Ergonomic Evaluations for Non-office Situations

Analytical Services has had a higher than normal ergonomics related injury rate. Many of these injuries are due to moving heavy manipulators and other equipment. The HEHF is currently evaluating and leading the health and safety aspects of this activity. Analytical Services Safety will continue to support this effort.

8.4.2.3 Support the Lock & Tag Pilot Program

Analytical Services has been tasked with piloting a new Lock & Tag Program. Line management is primarily responsible for this program. The path forward for safety support will likely include assisting line management in evaluating the ability of AS personnel to implement the pilot program, evaluating and ensuring compliance with OSHA requirements, and making comparisons with existing regulations.

8.4.2.4 Evaluate Recurring Deficiencies

Based on recent audit results, audit findings in some areas appear to be corrected but the general program and working philosophies may not be

changing, resulting in recurring deficiencies. This path forward activity will review all health and safety audit findings in the last two years, determine which findings are recurring, determine if the recurring findings are a result of programmatic failure, and recommend changes. Two programs targeted for evaluation are electrical and compressed gas storage.

8.4.2.5 Perform Facility Baseline Evaluations

A comprehensive facility baseline evaluation is needed for all AS facilities to better determine future path forward activities and assist in determining additional industrial hygiene monitoring activities. The path forward for this activity includes determining the correct protocol and inspection schedule, performing the evaluations, and determining the future activities. The goal of the baseline activities will be to identify major areas of compliance and non compliance to support additional evaluations and recommendations.

8.4.2.6 Establish Industrial Hygiene Monitoring Protocols

There is currently no program available that evaluates all laboratory chemicals to determine and document personnel exposure monitoring requirements. This activity will accomplish this and establish a monitoring protocol. The initial target compounds will be those with chemical specific OSHA Standards (a.k.a. "Vertical Standards"). All compounds with established OSHA Permissible Exposure Limits will eventually be evaluated. All chemicals will likely be placed in one of three categories, those that have objective data indicating exposure greater than limits is not feasible under current conditions, those that have historical monitoring indicating acceptable exposure compared to limits, those that require personnel exposure monitoring. Chemicals with no exposure limits will also be evaluated.

8.4.2.7 Implement the new Hazard Communication Standard

There is a new Hazard Communication Standard due out in CY97. This activity is currently deferred to future years due to lack of available FTE.

8.5 WEST AREA SAFETY SUPPORT PATH FORWARD

This section provides the West Area Safety Support path forward activities. This path forward is based upon the general information provided in this TWRS Safety Program Plan, the current West Area work load, and a prioritization of issues that should be addressed in the near future. The following table provides activities associated with each of the programmatic focus areas, target dates, and personnel involved.

TABLE 8-4 West Area Safety Path Forward Activities

PROGRAM ACTIVITY	TARGET DATE	ACTIONEE
HAZARD COMMUNICATION PROGRAM		
Train technicians to matrix and perform preliminary hazard assessments	8/15/96	RDM
Dispose of unneeded chemicals - 272-S	9/1/96	Line Mgmt
Update chemical inventories	9/15/96	T. Hanford
Ensure MSDS's reflect inventory	9/30/96	MLO
Matrix hazards	10/15/96	MLO
Prepare site-specific training for 272-S - insulators and painters	10/15/96	RDM
Prepare site-specific training for Saltwells team	10/15/96	RDM
Train on facility-specific hazards	11/1/96	RDM/MLO
CHEMICAL EXPOSURE ASSESSMENT		
Assess saltwells MSDS's, matrix hazards, assess hazard exposure, and formalize control methodology	12/1/96	RDM/MLO
Assess 272-S MSDS, matrix hazards, assess hazard exposure, formalize control methodology	12/1/96	RDM/MLO
Repeat steps for each chemical storage area in West Tank Farms	9/30/96	RDM/MLO
RESPIRATORY PROTECTION PROGRAM		
Submit revisions for HASP, as indicated by source sweeps, personal monitoring data, etc.	9/30/96	RDM
Assess hazards at 272-S and prescribe respirators for each use (following chemical inventory updates/hazard analysis)	12/1/96	RDM
BIOLOGICAL HAZARDS		
Hanta Virus		
Develop and finalize procedure for TWRS manual	8/30/96	SSG
Assist in design of clean-up jobs through JHA	As needed	RDM/Techs

TABLE 8-4 West Area Safety Path Forward Activities

PROGRAM ACTIVITY	TARGET DATE	ACTIONEE
LEAD		
Train technicians to perform sampling	8/25/96	RDM
Identify employees who may be exposed above TLV	10/15/96	JAP
Cross-check personnel enrolled in medical monitoring with exposed populations	10/30/96	JAP
Monitoring and compliance plan documentation	On-going	RDM/JAP
ERGONOMICS PROGRAM		
Train technicians to perform routine office assessments	9/15/96	RDM
Conduct office assessments	As needed	RDM/Techs
TANK VAPOR EXPOSURE MONITORING PROGRAM		
Monitor ongoing activities and prescribe PPE per HASP	As Reqrd	RDM/MLO DFS/JAP RDM
Conduct source sweeps	Quarterly	RDM/MLO DFS/JAP
Modify HASP, as indicated by source sweep data	12/1/96 3/1/97 6/1/97 9/1/97	RDM
Assess source sweep/PNNL data and recommend actions to management on appropriateness of current controls	As needed	RDM
HEARING CONSERVATION		
Verify technician training	2/1/97	RDM
Review noise source data and confirm	2/15/97	RDM & Melbihess
Assess employees at risk	3/30/97	Melbihess
Current personnel enrolled with exposed populations - recommendations to management	4/15/96	RDM
Assess appropriateness of available PPE	5/30/97	RDM
ASBESTOS CONTROL PROGRAM		
Train technicians (worker, inspector, management planner)	11/15/96	SSG
Review permits	As Reqrd	RDM
Collect samples	As Reqrd	RDM/MLO DFS/JAP
Review monitoring data	As Reqrd	RDM
Notify employees of exposure results	As Reqrd	RDM

TABLE 8-4 West Area Safety Path Forward Activities

PROGRAM ACTIVITY	TARGET DATE	ACTIONEE
HEAT STRESS PROGRAM		
Monitor all jobs with high heat potential	Task Driven	RDM/MLO DFS/JAP
Participate in and provide support to research program	9/30/97	DFS
DATABASE DEVELOPMENT PROGRAM		
Beta test new database	4/15/97	RDM
CONFINED SPACE PROGRAM		
Update list of confined spaces	12/15/97	MEN
Inspect each space for correct labeling, designation, and classification	3/15/97	MEN/RDM
JOB HAZARD ANALYSES		
Provide comments and recommendations to IH Programs on JHA tool	8/15/97	RDM/MEN SSG
Assist teams with assessing hazards of jobs and determining appropriate controls	As Reqrd	All
BASELINE HAZARD ANALYSES (Performed as integral part of Hazard Communication and Chemical Hazard Analysis programs)		
272-S chemical hazard analysis		
Saltwells chemical hazard analysis		
TRAINING		
Provide safety and hazcom training, and pre-job meetings as requested by teams	As Reqrd	RDM/MEN SSG
FIELD SURVEILLANCES		
Train technicians to perform field surveillances	On-going	MEN/RDM SSG
Perform field surveillances per approved schedule	Monthly	MEN/Techs
Provide results to line management	As completed	MEN/Techs
Track findings and verify correction prior to closure	As needed	MEN/Techs
Develop trending charts	Quarterly	Core Grp

TABLE 8-4 West Area Safety Path Forward Activities

PROGRAM ACTIVITY	TARGET DATE	ACTIONEE
FIRE PROTECTION ASSESSMENTS		
Perform fire protection assessments per approved schedule	As Reqrd	RAH
Provide results to line management	As Completed	RAH
Track findings and verify correction prior to closure	As needed	RAH
SELF-ASSESSMENT PROGRAM		
Provide self-assessment schedule to Project Manager for approval	Quarterly	SSG
Perform self-assessments per approved schedule	Monthly	MEN/RDM SSG/Techs
Provide results to party responsible for corrective actions	Monthly	MEN/RDM SSG

8.6 EAST AREA/EVAPORATOR SAFETY SUPPORT PATH FORWARD

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9.0 TRANSITION ISSUES/IMPLEMENTATION SCHEDULES

In order to make the transition under the reorganization easier, a transition plan for each of the following issues has been developed or will be more fully addressed. For those areas that are still being developed, a transition plan will describe how each activity will be carried out, and how changes to the current way of business will be carried out. The plans will also contain a schedule for implementing those changes.

9.1 COMMUNICATIONS PLAN

Maintaining communications will be critical to ensuring a consistent and effective safety program within TWRS. The following are some methods that will be used to ensure adequate information exchange between disciplines and TWRS Safety as a whole.

- The centralized Safety library resources will remain within the Core Group, but made available to all safety personnel.
- The quarterly report to DOE-RL will be written by the core group, with input from field and CPO safety personnel.
- Urgent information will be exchanged by phone and cc:mail. CC:mail distribution lists will be developed for each safety discipline to ensure all personnel are notified of appropriate information.
- TWRS safety personnel within each discipline (NS, IS, IH) should maintain communication linkages to foster information exchange.
- Central Safety Group (Hanford-wide) monthly discipline meetings should be attended by representatives from each organization (field, core, and CPO)
- The monthly DOE-RL interface meeting will be organized and facilitated through the core group, with input from the field and CPO organizations on facility-specific activities.
- Field safety personnel should attend/participate in monthly facility safety meetings to ensure appropriate safety information is disseminated to employees.
- Safety personnel should attend site-wide forums (e.g., Hanford Occupational Safety and Health forum) to remain involved in the development of site-wide strategies and communicate needs from a field perspective.
- COE information should be conveyed to the facility and field personnel through the COE Representatives for TWRS.
- The TWRS Safety Core group shall continue to be the main interface of the Worker Safety and Health Sub-TAP visits with participation from field staff as appropriate.
- Flow diagrams for information exchange with the COE, external agencies, and within TWRS Safety are shown in Attachments 18 - 20.

9.2 TRAINING

9.2.1 Re-Organization Orientation

Managers, Team Leaders, Planners, etc., need to remain informed of the changes taking place in the TWRS Safety structure. This orientation should include

changes in structure, changes in workscope, how business will be conducted, and how the changes will affect them and work in the field.

9.2.2 Staff Qualification

TWRS Safety (Nuclear Safety, Industrial Safety, and Industrial Hygiene) staff must maintain training and qualifications to perform their assigned function. Those training and qualification requirements are specified in WHC-IP-0842 and WHC-IP-0030. Qualification and training folders for assigned individuals will be transferred to line management for maintenance.

An Industrial Hygiene Technician Training Program has been developed and is being implemented at this time. The program is a result of RL findings that no formalized process existed to qualify technicians for performance of work. This program will be utilized to satisfy both core team and field IH technician needs. The program will be overseen by the Core group.

9.3 PROJECT OWNERSHIP

Due to subject matter expertise on specific projects, a transition time will be required. Short term projects (expected completion in 1 - 2 months) will remain with the current project owner. Long term projects should be transferred to the appropriate group (core or field) depending on the nature of the project. The project transfer is expected to take several months, in order for the new project owner to gain the level of knowledge needed to properly administer the project.

9.4 RECORDS MANAGEMENT

9.4.1 Document Review

Coordination of records management will be essential for the re-organization to be effective. Facility-specific documents (reviewed by field safety personnel) will be tracked by the facility document review coordinator. The coordinator will coordinate documents that need further review by other organizations. A flow diagram showing the document review process is provided in Attachment 21.

9.4.2 Survey Reports

Trending is currently being performed on office ergonomics findings and IS field and construction site surveys. The TWRS Safety Core group will continue this function under the new structure, and will receive copies of survey reports from the surveyors.

9.4.3 Industrial Hygiene Monitoring Data

Industrial Hygiene monitoring data (personnel monitoring, air sampling, source monitoring) is currently reviewed by an industrial hygienist and entered into a database. A plan needs to be developed on who will be entering information into the database, and how information can be retrieved when needed. Who stores or where original records are stored, and who is responsible for notifying personnel of monitoring results should also be defined.

9.5 BACK-UP RESOURCES

A reciprocal program for sharing of resources is essential. Instances will occur where the field or core safety resources are insufficient to address a specific need or problem. These instances could include staff vacations, training, unplanned absences, or new work scope. To inquire about back-up resources, a request should be made to core or field group management, whichever is appropriate. This request will be reviewed against current projects and priorities, and a decision made as to the level of support that can be provided. To the extent possible, every effort will be made to support these activities.

9.6 WORKSCOPE PRIORITIES

Priority and a redefined schedule of workscope needs to be adjusted. Due to reorganization, program implementation time frames and priorities need to be reestablished for Characterization Project Operations (CPO), East and West jobs, and for compliance projects such as baselining efforts. This transition item is addressed as details on workscope and priorities are established.

9.7 OVERTIME - INDUSTRIAL HYGIENE TECHNICIANS

The resource pool for overtime will consist of all industrial hygiene technicians in both the core and field organizations. The pool will be managed by the core group. First choice of overtime will be given to the technician who (1) signed up on the overtime list for consideration no later than the first working day of each week, and (2) has worked the fewest total overtime hours compared to others on the list. If the technician meeting those criteria chooses not to work the overtime, then it will be offered to the next person on the list with the fewest overtime hours, and so on until the overtime is covered.

All overtime requested by the Core group and CPO will be relayed to the field IH Technicians if there are any on the list. Conversely, a field representative must contact the Core group as soon as overtime is requested so the process of obtaining coverage can begin.

9.8 ON CALL LIST - INDUSTRIAL HYGIENE

An on call list will be maintained by the core group and continue as it currently exists with changes to represent the new organization. Each IHT will be on call for one week at a time by seniority. During the week, the IHT's working backshift will be the primary responders. On weekends and holidays, the IHT on the call list will be the primary responder. For IH assistance, the IHT on call should contact the Industrial Hygienist for the specific area.

9.9 DISSEMINATION OF EQUIPMENT

Disposable resources such as tygon tubing, sampling media, and test equipment will be available for use by all IH technicians. Monitoring equipment will continue to be enrolled, calibrated, and supported by the IH Equipment Laboratory located in 2101M, 200E.

9.10 ODOR HOTLINE

The Odor Hotline program should be redefined to make the Operations Shift Manager the coordinator of tank vapor issues.

10.0 PROGRAM PRIORITIES

Prioritization of the TWRS Safety Section Program elements is based on the primary goals of providing worker protection from recognized hazards, meeting commitments and establishing credibility and responsiveness to all TWRS Safety customers, and providing definition to the Safety program so technical excellence and continuous improvement can be recognized. Program priorities include the following:

1) Commitment to Deliverables / Goals

2) Hazard Assessment

3) Recordkeeping

4) Special Projects

5) Hazard Prevention and Control

6) Field Surveys, Appraisals

7) Trending

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11.0 REFERENCES

10 CFR 830.120, *Nuclear Safety Management*

29 CFR 1910, *Occupational Safety and Health Standards for General Industry*

29 CFR 1926, *Occupational Safety and Health Standards for Construction*

DOE Order 5480.5, *Safety of Nuclear Facilities*

DOE Order 5480.7A, *Fire Protection Program*

DOE Order 5480.10A, *Contractor Industrial Hygiene Program*

DOE Order 5480.23, *Nuclear Safety Analysis Reports*

DOE Order 5483.1A, *Industrial Safety Program for Government Owned - Contractor Operated Facilities*

ISBN-0-86587-735-1, *OSHA Field Operations Manual, 2nd Edition*, Government Institutes, Inc., Rockville, Maryland, October, 1987.

WHC-CM-1, *Westinghouse Hanford Company Policies and Charters*, "Environment, Safety, and Health Policy"

WHC-CM-1-10, *Industrial Safety Manual*

WHC-CM-1-11, *Industrial Hygiene Manual*

WHC-CM-1-40, *Industrial Hygiene Manual*

WHC-CM-1-41, *Fire Protection Manual*

WHC-CM-3-5, *Document Control and Record Management Manual*

WHC-CM-4-29, *Nuclear Criticality Safety Manual*

WHC-CM-4-46, *Safety Analysis Manual*

WHC-IP-0030, *Safety Department Administrative Manual*

WHC-IP-0842, *TWRS Administration Manual*, Volume III, "Training"

WHC-SD-WM-HSP-002, Rev. 2E, *Tank Farm Health and Safety Plan*

WHC-SD-WM-MAR-008, Rev. 0, *Tank Waste Remediation System Mission Analysis*

High Level Waste Storage Tanks/242-A Evaporator S/RID, February 1996

Multi-Year Program Plan

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TWRS SAFETY PROGRAM PLAN WHC-SP-1185

ATTACHMENTS

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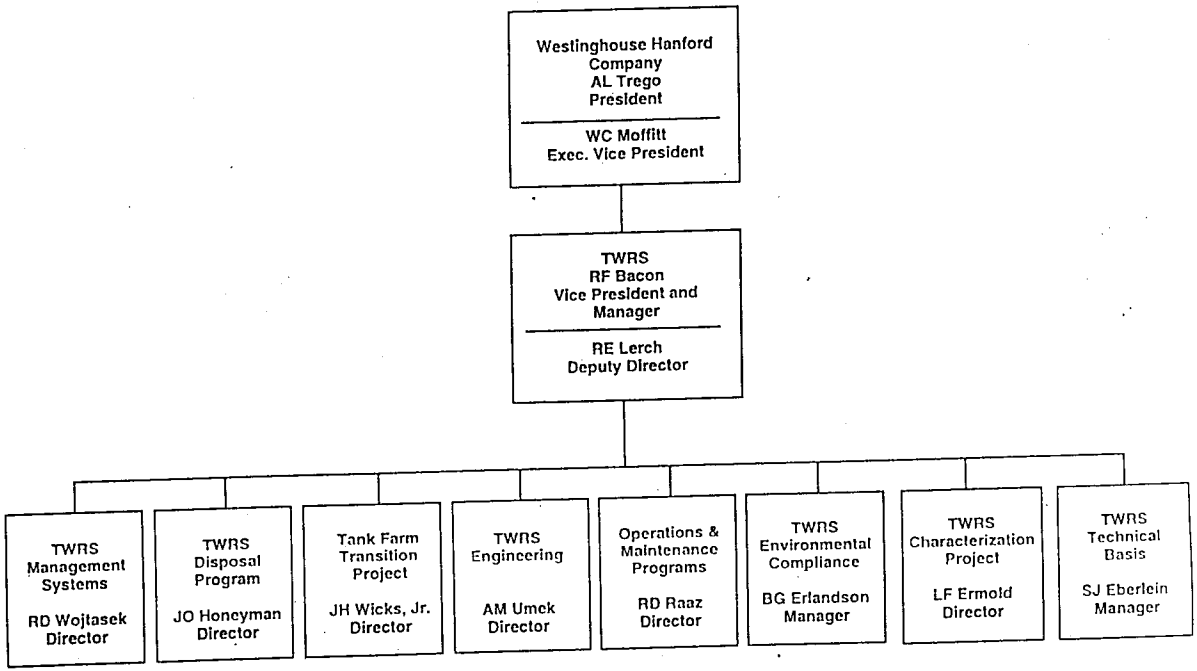
Tank Waste Remediation System



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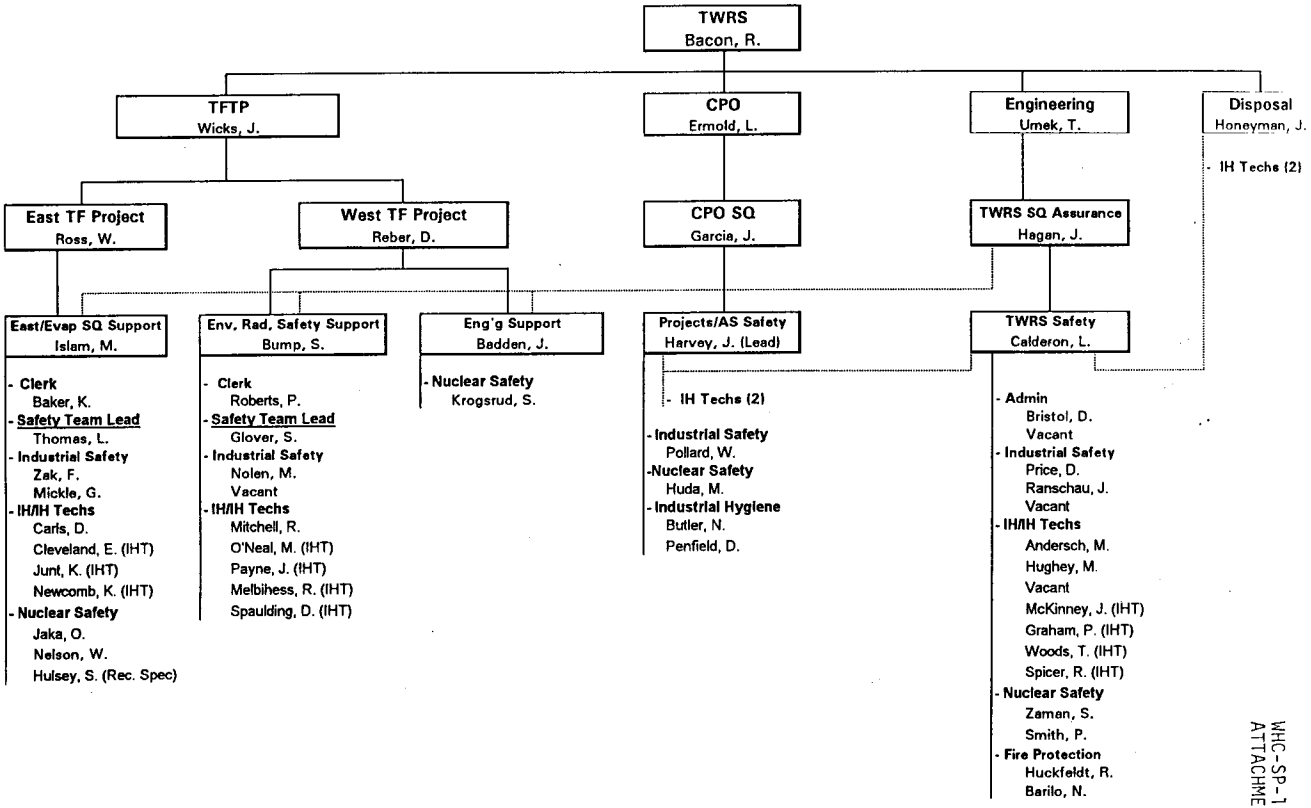
ATTACHMENT 1

TWRS SAFETY CHAIN OF COMMAND



WHC-SP-1185
ATTACHMENT 2

COMMORG.XLS
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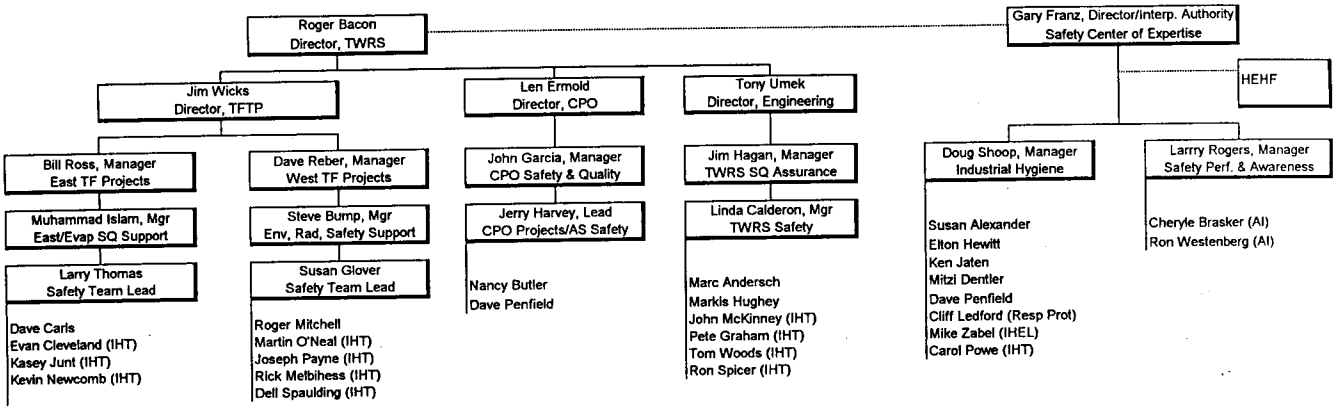
INDUSTRIAL HYGIENE
TWRS Communication Interface



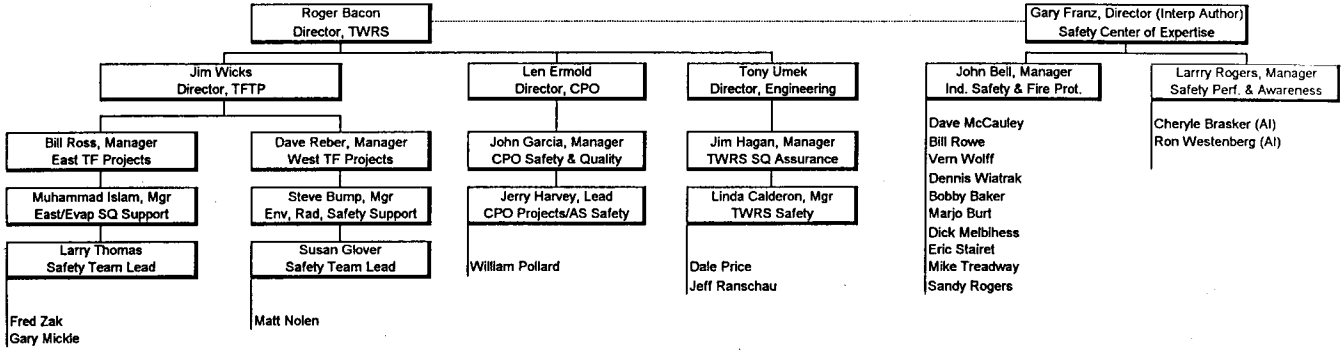
Interactions between the groups are normally carried out informally, with direct interaction between IH Personnel. As issues escalate, they are dealt with through successive levels of management.

HEHF - Hanford Employee Health Foundation
IHT - Industrial Hygiene Technician
IHEL - Industrial Hygiene Equipment Laboratory
AI - Accident Investigator

ATTACHMENT 3

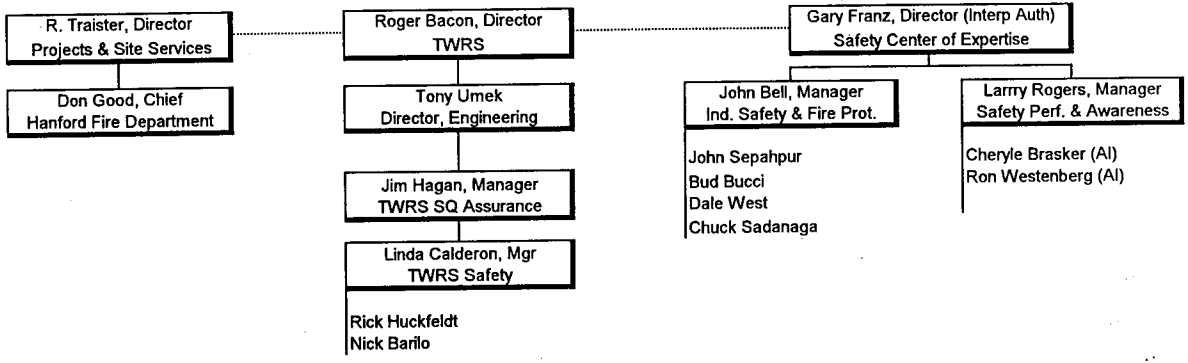
COMMORG.XLS
Sheet 1
7/26/96

INDUSTRIAL SAFETY
TWRS Communication Interface



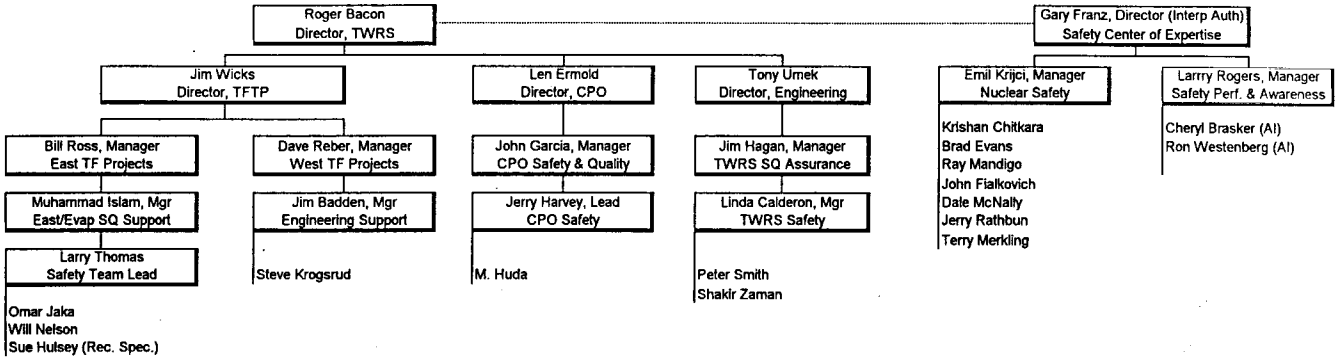
Interactions between the groups are normally carried out informally, with direct interaction between IS Personnel. As issues escalate, they are dealt with through successive levels of management.

Fire Protection
TWRS Communication Interface



Interactions between the groups are normally carried out informally, with direct interaction between FP Personnel.
As issues escalate, they are dealt with through successive levels of management.

NUCLEAR SAFETY
TWRS Communication Interface

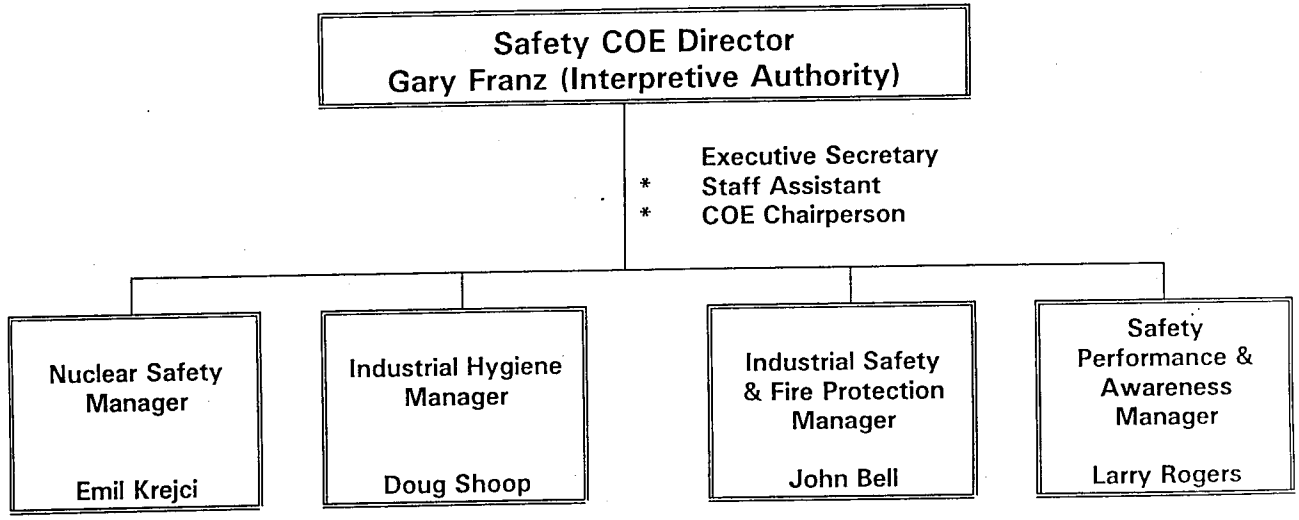


Interactions between the groups are normally carried out informally, with direct interaction between NS Personnel. As issues escalate, they are dealt with through successive levels of management.

AI - Accident Investigator

COMMORG.XLS
Sheet 1
8/9/96

SAFETY CENTER OF EXPERTISE
SUPPORT GROUPS



ATTACHMENT 7

AVAILABLE INDUSTRIAL SAFETY EQUIPMENT

Extendable mirrors with illumination
Wood Head 3 prong tester/GFCI Tester
25' Tape Measure
Compass
Belt Pac
Small, high intensity flashlight
Soft side chemical goggles
Solar Power Scientfic Calculator
Stopwatch
Surveyor's Clipboard
35mm Camera - Pentax 115 Zoom
Poloroid Camera - Captiva SE
VHS Video Camera - 8 mm Sony

AVAILABLE INDUSTRIAL HYGIENE EQUIPMENT*

IH Air Sampling Equipment Field Calibrated and Maintained by Industrial Hygiene Technicians in Field and Core Groups

Industrial Scientific O_2-LEL Meter, Model MX 251
Industrial Scientific Sampling Pump, Model SP-400
Thermo-Environmental Organic Vapor Meter, Model 580
Industrial Scientific Multigas Meter, Model TMX-410
Draeger Sampling Pump, Model 31
Draeger Sampling Pump, Model Accuro
Industrial Scientific Sampling Pump, Model SP-202

IH Equipment Maintained/Calibrated by IH Equipment Lab

Thermo-Enviromental Continuous Organic Air Monitor, Model 52
Sentex Scentograph Gas Chromatograph
Foxboro Miran Infrared Organic Analyzer, Model 1BX
Gilian Air Sampling Pump
GenRad Sound Level Meter, Model 1980
GenRad Sound Level Meter, Model 1560
Quest Sound Level Meter, Model 2700
Quest Sound Level Meter, Model 215
Simpson Light Meter
Extech Light Meter
Metrosonics Wet Bulb Globe Thermometer, Model HS-360 (2)
Alnor Velometer, Model 6000P
Metrosonics Heat Stress Dosimeter (3)
Quest Heat Stress Dosimeters
Metrosonics Wet Bulb Globe Thermometer, Model HS-360 (4)

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* All IH equipment belongs to the COE IH Equipment Lab, though some is stored, field calibrated and maintained by IHTs in the field and core groups.

DOCUMENT REVIEW MATRIX

ACTIVITIES, DOCUMENTS	IH	IS	FP	NS	RC*
Electrical: open panels/boxes, lockout/tagout, electrical systems, conduit, emergency power, cable tray, grounding, bonding, transformers, temporary wiring.		X			
Energy Sources: fluid, steam, gas, water, air lines or pressure sources.		X			
Mechanized Equipment: cranes, forklifts, trucks, dozers, backhoes, bobcats, soil boring/drilling equipment.		X			
Excavations: >4 feet, contain energized systems, require shoring, sloping, type B or C soil.		X			X
Elevated Surfaces: platforms, scaffolding, manlifts, ladders, raised surfaces >6 feet.		X			
Powered Equipment: drills, saws, grinders, sanders, presses, lathes.		X	X		
Hot Works: welding, torch cutting, soldering.		X	X		
Hoisting and Rigging: cranes, slings, wire ropes, pulleys.		X			
Demolition: Removal of floors, walls, facilities, equipment.	X	X	X		X
Chemical Usage: all chemicals, paints, lead, asbestos, mercury, beryllium, carcinogens, cleaners, solvents, glues, epoxys, pesticides.	X		X		
Confined Space Entry: Limited access, permit required, non-permit required.	X	X			
Surface Removal: Sandblasting, abrasive blasting, sanding, scabbing.	X				X
Hazardous Waste Handling: investigation, clean-up, contaminated soil excavation, disruption.	X	X			X
Personal Protective Equipment: respirators, gloves, lanyards, harnesses, Class A, B, or C dress, faceshields.	X	X			X
Ergonomics: heavy lifting >30 lbs., high vibration, control systems.	X				
Sanitation: water systems, trash hauling, weed control, insect control, kitchen areas, backflow prevention.	X				
Environment: Temperature extremes (hot, cold), lighting, ventilation, noise, HEPA filters	X				
Fire Protection/Suppression Systems: Alarm Panels, sprinklers, detectors, hydrants, fire barriers, extinguishers, emergency equipment, fireproofing, acceptance tests, inert systems for fire protection, halon.			X		
Facility Changes: Roof access, door or wall penetrations or moving, accessibility, furniture moves, construction materials, signs, stairs, handrails, storage areas, building/equipment location.		X	X		X
Fire Hazard Analysis			X	X	X
Safety and Health Plans	X	X	X		
Work Packages (See activities)					
Work Packages involving watchlist tanks or safety class 1 or 2 equipment.			X**	X	
Material Safety Data Sheets/Purchase Requisitions for Chemicals	X				

* Documents related to or involving radiological control issues, areas, or facilities only.

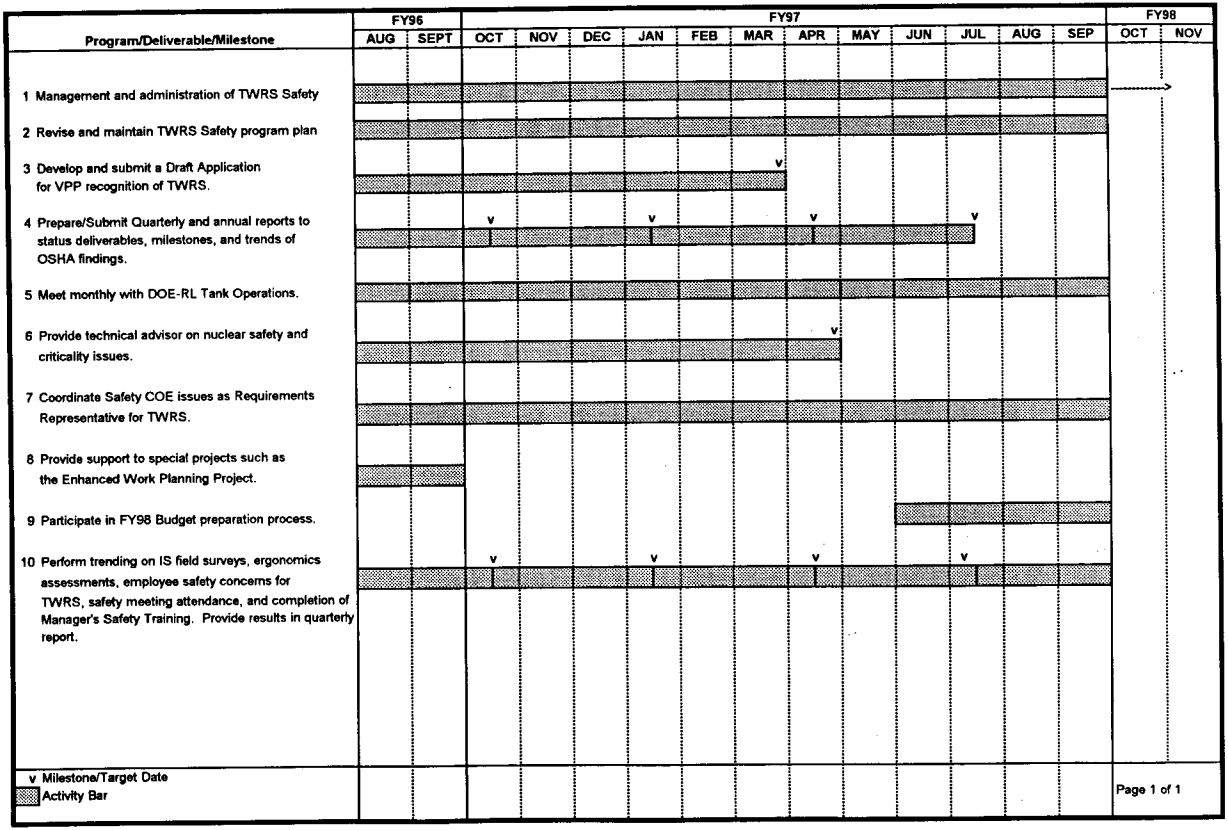
** Flammable gas watchlist tanks only.

DOCUMENT REVIEW MATRIX

ACTIVITIES, DOCUMENTS	IH	IS	FP	NS	RC*
Vendor Information/Specification (See Activities)					
Work Permits (See Activities)					
Design Criteria/Engineering Evaluation/Conceptual Designs/Functional Design Criteria/Engineering design.	X	X	X	X	X
Hazard Analysis Document Preliminary Safety Analysis Final Safety Analysis Report (FSAR) Safety Analysis Reports (SAR), Interim Safety Basis Document (ISB), Accelerated Safety Analysis Report (ASA), Safety Evaluations, Safety Assessments.	X	X	X	X	X
Operational Safety Requirements (OSR's)			X	X	X
Operating Specification Document (OSD)			X	X	X
Unreviewed Safety Question (USQ)				X	X
Supporting Documents (SD) (See activities)					
Criticality Related Documents				X	
Projects	X	X	X	X	X
Major Upgrades	X	X	X	X	X
Program Plans				X	X
Quality Assurance Program Plan (QAPP)				X	
Acceptance Test Procedure (ATP)/Operational Test Procedure (OTP)	X	X	X	X	X
Procedures (See Activities)					
Procedures involving safety class 1 or 2 equipment, OSR, TSR, OSD, PCP or Watchlist tank			X	X	
Readiness Reviews	X	X	X	X	X
Waste Transfer				X	X
Lessons Learned (See Activities)					
ECN dealing with Safety Class 3 Equipment	X	X			X
ECN dealing with Safety Class 1 or 2 Equipment.			X	X	X
RADIOLOGICAL WORK: "Any work that requires the handling of radioactive material or which requires access to Radiation Areas, High Radiation Areas, Contamination Areas, High Contamination Areas or Airborne Radioactivity Areas."					X

* Documents related to or involving radiological control issues, areas, or facilities only.

TWRS SAFETY CORE GROUP ADMINISTRATION AND OVERSIGHT IMPLEMENTATION PLAN/SCHEDULE

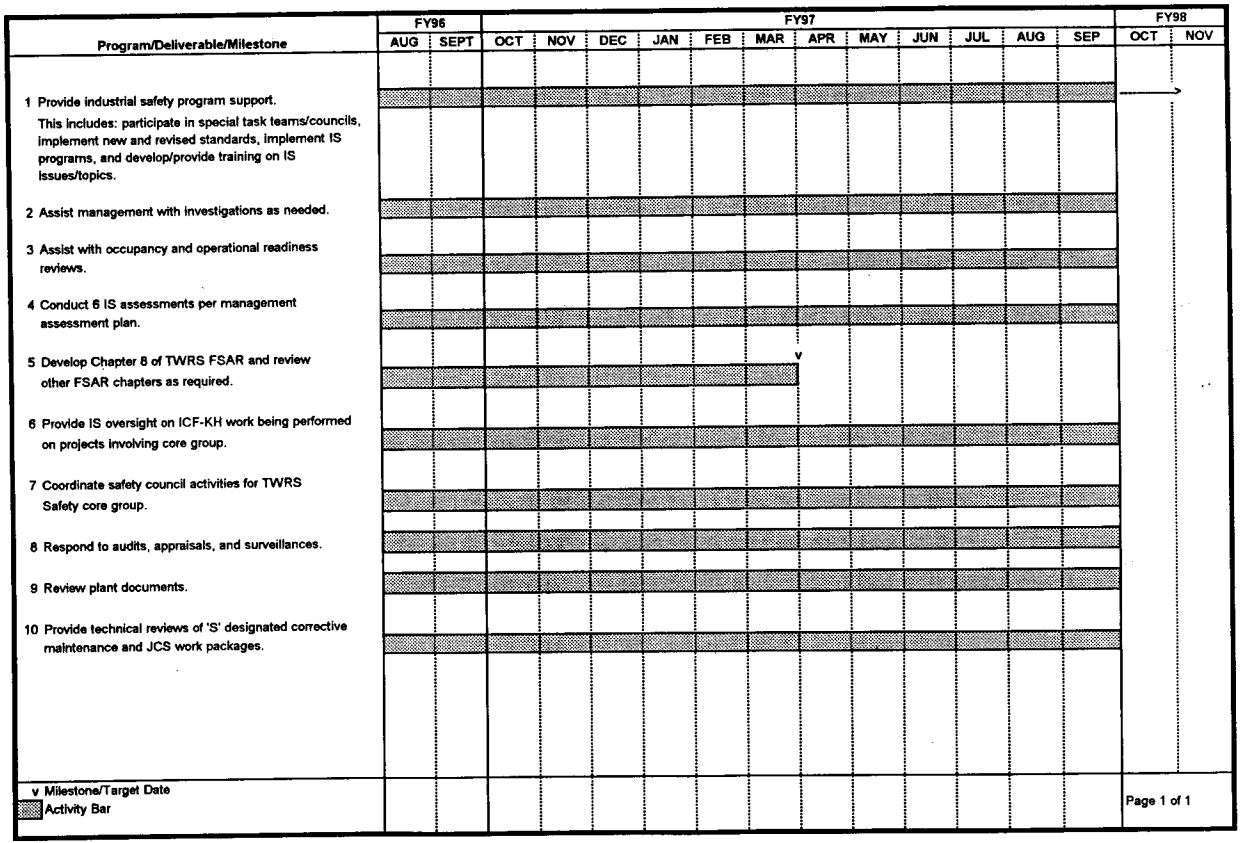


TWRS SAFETY CORE GROUP INDUSTRIAL HYGIENE IMPLEMENTATION PLAN/SCHEDULE

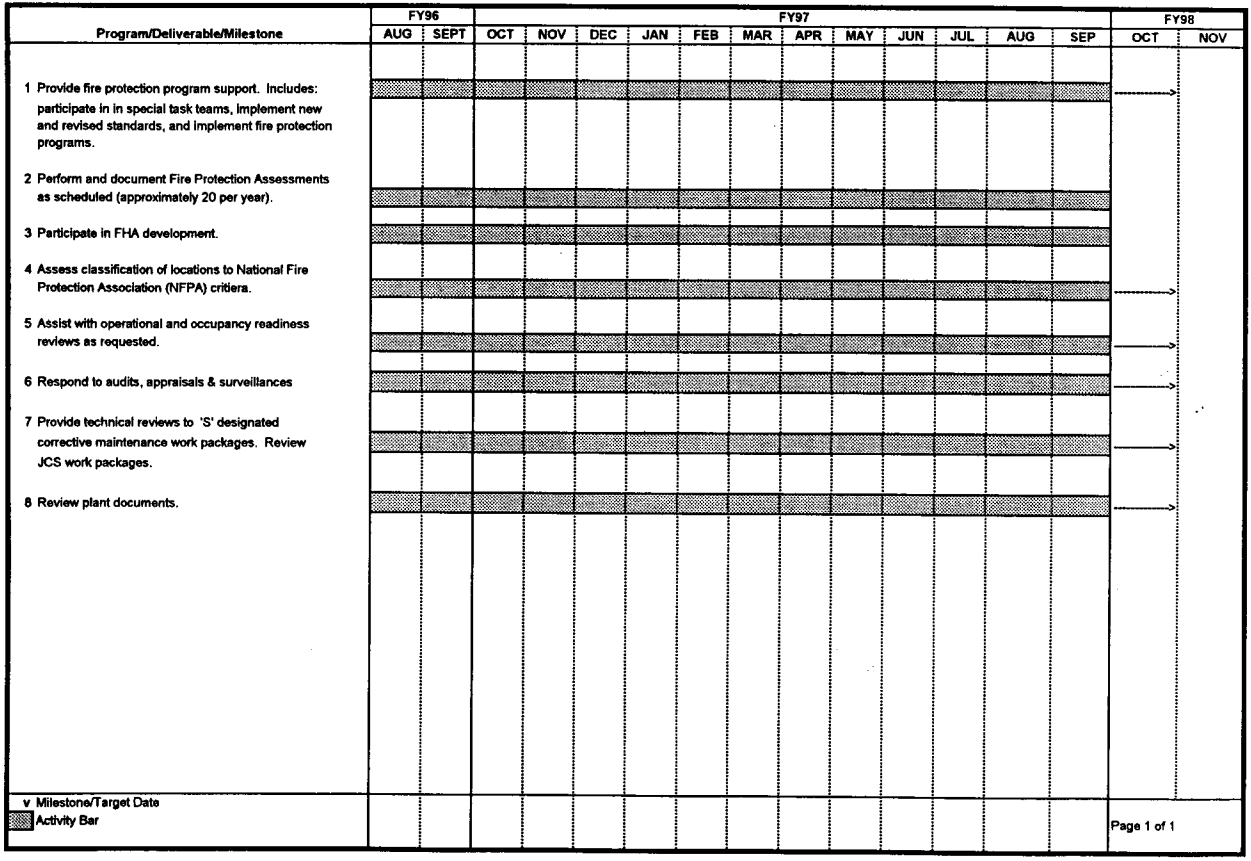
Program/Deliverable/Milestone	FY96		FY97												FY98	
	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
1 Provide industrial hygiene program support: perform TWRS-wide document reviews, participate in special task teams, implement new/revised standards, and implement IH programs.																
2 Perform IH monitoring to support TWRS operations activities, including collecting data, maintaining IH equipment, field monitoring, supporting the respiratory protection program, and air cylinder sampling.																
3 Maintain Tank Farm Health and Safety Plan. Update as needed.																
4 Perform 72 source monitoring sweeps annually and report status in quarterly report.			v			v			v			v				
5 Develop an Industrial Hygiene Compliance Plan.																
6 Provide instructions/training assistance to field personnel on IH issues as needed.																
7 Conduct 6 IH Assessments as a function of the Management Assessment Plan.																
8 Assist in investigations of illness, accident, injuries, and resolution of employee concerns.																
9 Review work packages and plant documents and resolve comments and issues.																
10 Participate in and implement special projects as rqrd.																
11 Perform ergonomics assessments as requested by management and report results.																
12 Support OSH S/RIDS efforts and assessments.																
13 Develop an on-going gas/vapor monitoring plan.																
14 Conduct 3 sets of nitrous oxide (N2O) monitoring for tanks known to emanate tank vapors.																

v Milestone/Target Date
Activity Bar

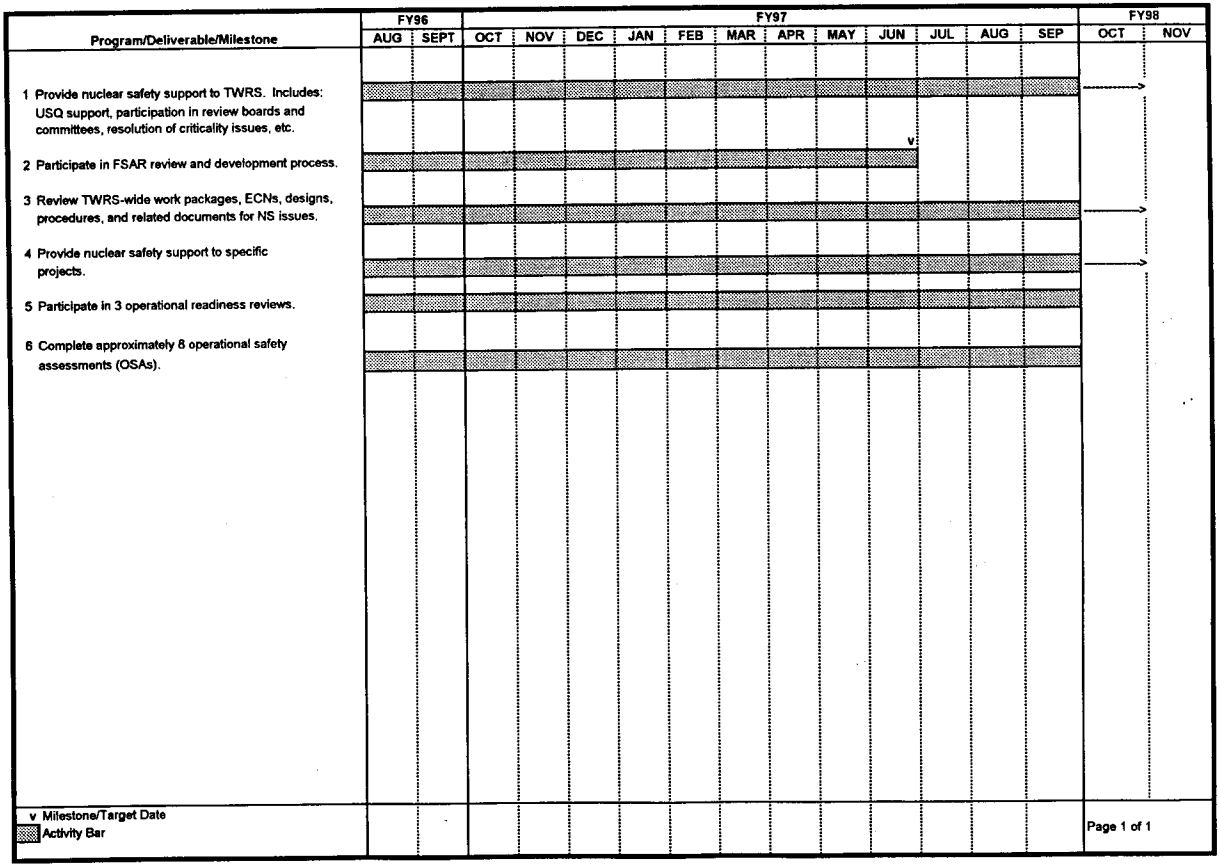
TWRS SAFETY CORE GROUP INDUSTRIAL SAFETY IMPLEMENTATION PLAN/SCHEDULE



TWRS SAFETY CORE GROUP FIRE PROTECTION
IMPLEMENTATION PLAN/SCHEDULE



TWRS SAFETY CORE GROUP NUCLEAR SAFETY IMPLEMENTATION PLAN/SCHEDULE



ANALYTICAL SERVICES SAFETY
PROJECTED BASELINE WORKLOAD

	FY 96			FY 97												FY98	FY99
PROJECTED WORKLOAD[1]	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
Paperwork Reviews	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
FTEs	1.2	1.2	1.0[2]	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Line Management Requested Support	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
FTEs	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0/5	0.5	0.5	0.5	0.5	0.5
Required Program Reviews (Confined Space, Chemical Hygiene Plan)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
FTEs	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Staff Meetings, Training and Periodic Reports	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
FTEs	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Audit Support	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
FTEs	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Nuclear Safety and Fire Protection Requested Support	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
FTEs	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
TOTAL FTEs	2.3	2.3	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
FTEs Budgeted	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
FTEs Available for Path Forward Activities	**-0.1**	**-0.1**	**0.1**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**

1) Not including work to support path forward activities

2) Assumes successful implementation of the Reduce Safety Paperwork Review path forward activity

ANALYTICAL SERVICES SAFETY
PATH FORWARD ACTIVITIES IMPLEMENTATION PLAN/SCHEDULE

	FY 96			FY97												FY98	FY99
PROGRAM/DELIVERABLE/ MILESTONE	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
FTEs Available for Path Forward Activities	-0.1	-0.1	0.1	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
1)Reduce Safety Paperwork Reviews																	
Finalize Review Matrix	X																
Train appropriate engineering and document control staff	X	X															
Implement modified review matrix		X	X														
Evaluate procurement requirements		X															
Make recommendations regarding paperwork reductions		X	X														
Evaluate other paperwork reduction methods and make recommendations			X	X													
Evaluate success of paperwork review reduction efforts and write report					X	X											
Estimated FTEs Required	0.1	0.1	0.1	0.05	0.05	0.05											
2) Support Ergonomic Evaluations for Non-office Situations	X	X	X	X	X	X	X	X	X								
Estimated FTEs Required	Covered as part of Line Management Requested Support																
3) Support the Lock & Tag Pilot Program	X	X	X	X	X	X	X	X	X	X							
Estimated FTEs Required	Covered as part of Line Management Requested Support																

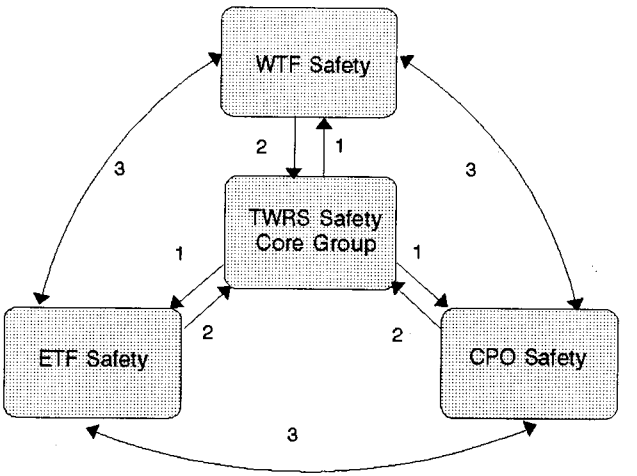
ANALYTICAL SERVICES SAFETY
PATH FORWARD ACTIVITIES IMPLEMENTATION PLAN/SCHEDULE

	FY 96			FY97												FY98	FY99
PROGRAM/DELIVERABLE/ MILESTONE	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
4) Evaluate Recurring Deficiencies																	
Review previous two years audits				X													
Inspect facilities in program areas with apparent recurring deficiencies					X	X											
Evaluate results and identify programmatic weaknesses if present						X											
Write report with recommendations							X										
Determine effects of recommendations and write follow-up report														X			
Estimated FTEs Required				0.2	0.2	0.2	0.2							0.1			
5) Perform Facility Baseline Evaluations																	
Determine Protocol and Schedule							X	X									
Perform Evaluations								X	X	X	X	X					
Determine Path Forward and Write Report												X	X				
Estimated FTEs Required							0.1	0.2	0.3	0.3	0.3	0.3	0.3				
6) Establish IH Monitoring Protocols																	
Identify and categorize all chemicals regarding PEL and Vertical Standard														X	X		
Differentiate chemicals with objective data, historical data, and those requiring monitoring															X	X	
Develop monitoring plan																X	
Estimated FTEs Required														0.1	0.3	X	
7) Implement the New Hazard Communication Standard																X	

ANALYTICAL SERVICES SAFETY
FULL TIME EQUIVALENT SUMMARY

	FY 96			FY 97												FY98	FY99
ACTIVITY	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
Current Workload FTEs	2.3	2.3	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
1) Reduce Safety Paperwork Reviews	0.1	0.1	0.1	0.05	0.05	0.05											
2) Support Ergonomic Evaluations for Non-office Situations	Covered as part of Line Management Requested Support																
3) Support the Lock & Tag Pilot Program	Covered as part of Line Management Requested Support																
4) Evaluate Recurring Deficiencies				0.2	0.2	0.2	0.2							0.1			
5) Perform Facility Baseline Evaluations							0.1	0.2	0.3	0.3	0.3	0.3	0.3				
6) Establish IH Monitoring Protocols														0.1	0.3	X	X
7) Implement the New Hazard Communication Standard																X	X
TOTAL FTEs	2.4	2.3	2.2	2.15	2.15	2.15	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	X	X
FTEs Budgeted	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	X	X
FTEs Available for Path Forward Activities	**-0.2**	**-0.2**	**0.0**	**0.05**	**0.05**	**0.05**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.1**	**0.0**	**X**	**X**

SAFETY COMMUNICATIONS



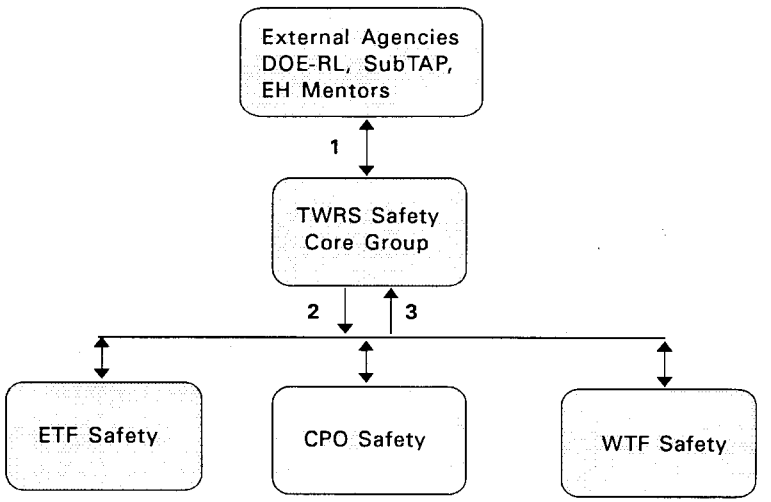
Communication Link 1
- External organization information
- Requirements/Regulation changes (info from COE)
- Program implementation strategies
- TWRS-wide training programs
- Input to facility required reading program
- Trending information

Communication Link 2
- Provide input for quarterly reports to DOE/TWRS management
- Input on field activities for DOE interface, SubTAP, and external committees
- Keep core team informed on field safety issues
- Forward site safety/ergonomic survey info to core for trending
- Personal monitoring results

Communication Link 3
- Exchange ideas on solving safety issues
- Address consistency and application of programs for application in the field

In addition to the above, safety personnel attend Hanford-wide meetings for professionals within each discipline.

COMMUNICATIONS WITH EXTERNAL ORGANIZATIONS



Communication Link 1

* Core to provide interface with organizations external to TWRS. This includes DOE-RL (Reports and interface meetings), SubTAP (Coordinate meeting, presentations, and responses to recommendations), EH Mentors (Work with mentors to resolve TWRS safety issues), and participate in safety related councils and committees (DNFSB, PAPC, PRC, etc.).

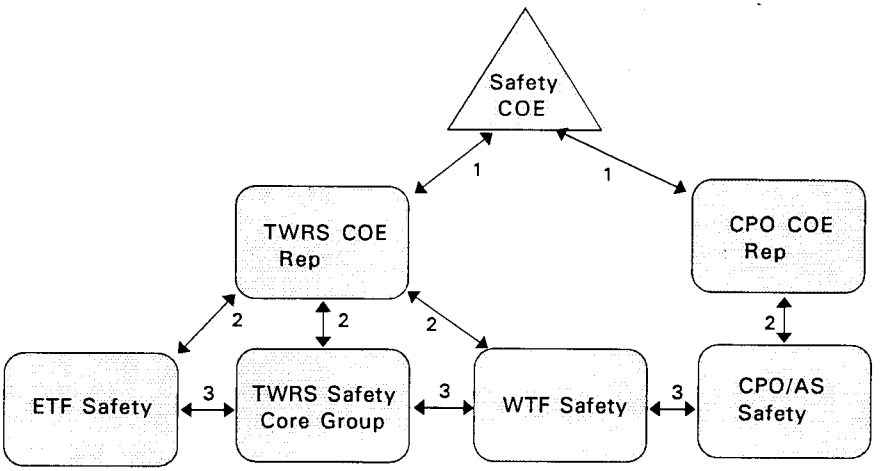
Communication Link 2

* Relay information to field personnel from DOE-RL, EH, SubTAP, safety committees, and other external agencies.

Communication Link 3

* Provide input on field activities and safety issues for inclusion in Quarterly Report, DOE Interface meetings, SubTAP sessions, and safety committees.

SAFETY CENTER OF EXPERTISE COMMUNICATION CHANNELS



Communication Link 1

COE representatives provide the interface between TWRS and CPO and the Safety Center of Expertise. Topics of exchange include:

* Hanford-wide program directions
* Regulation/requirement changes
* Site safety initiatives
* Field issues with potential site-wide impact
* Trending of safety data

Communication Link 2

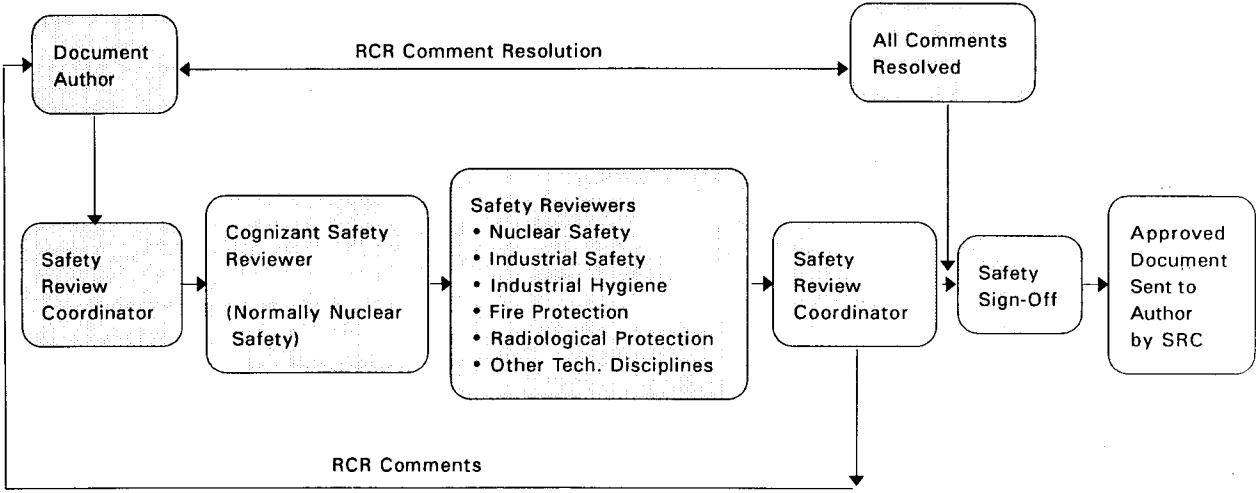
* COE Reps will communicate information to tank farm field, core, and CPO safety personnel through ccmail, formal memos, phone, or required reading programs, as appropriate.
* Tank Farm field, core, and CPO safety personnel will provide information on TWRS safety issues to the COE through the representative.

Communication Link 3

* CPO, field, and core safety personnel ensure consistent program implementation throughout TWRS.

In addition to the above, COE personnel will work directly with safety personnel in areas such as document and program reviews and incident/accident investigations.

DOCUMENT REVIEW FLOW DIAGRAM



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