



Department of Energy

Oak Ridge Operations
P.O. Box 2001
Oak Ridge, Tennessee 37831—

May 22, 2007

Dr. Ronald D. Townsend, Director
Oak Ridge Institute for Science
and Education
Mail Stop 22
Post Office Box 117
Oak Ridge, Tennessee 37831-0117

Dear Dr. Townsend:

**CONTRACT NO. DEAC05-06OR23100, OAK RIDGE INSTITUTE FOR SCIENCE AND
EDUCATION (ORISE) 10 CFR 851 WORKER SAFETY AND HEALTH PROGRAM (WSHP)
DESCRIPTION DOCUMENT**

The ORISE WSHP submitted to us on February 26, 2007, was evaluated to provide reasonable assurance that the ORISE WSHP accurately describes the methods by which the requirements of 10 CFR 851, Subpart C, will be satisfied. It is recognized that there are several issues pending which may result in changes to the WSHP. These issues are:

- The jurisdictional status of Methodist Medical Center for worker safety and health that continues to be explored through communications with the Tennessee Occupational Safety and Health Administration
- The permanent variance from the Occupational Medicine requirements for ORISE subcontractors contained in Appendix A to 10 CFR 851 – Worker Safety and Health Functional Areas

Pursuant to 10 CFR 851.11(b), the ORISE WSHP dated May 8, 2007, is approved. The evaluation resulted in the conclusion that the established WSHP reasonably describes the methods by which Oak Ridge Associated Universities will comply with the applicable rule requirements, provides for a safe and healthful workplace and is implemented through integration with other ORISE management systems elements. This approval does not validate each functional element of referenced compliance method contained in the WSHP.

The time and effort applied to the development of the WSHP and the responsive and open process in working with Assistant Manager for Science staff and review team are appreciated.

If there are any questions or additional information is required, please contact me at 576-4444 or Johnny Moore of my staff at 576-3536.

Sincerely,

A handwritten signature in black ink that reads "Gerald G. Boyd". The signature is fluid and cursive, with the first name being the most prominent.

Gerald G. Boyd
Manager

Dr. Ronald D. Townsend

-2-

May 22, 2007

cc:

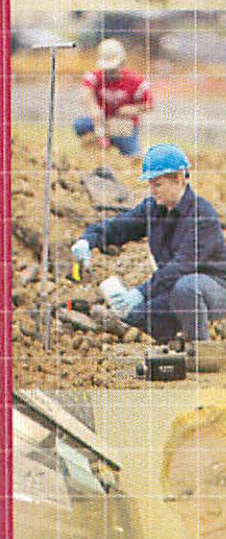
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Oak Ridge
Associated Universities

Oak Ridge Institute
for Science and Education

10 CFR 851
Worker Safety and Health
Protection Program

May 8, 2007

ORISE

Oak Ridge Institute for Science and Education

ORAU
OAK RIDGE ASSOCIATED UNIVERSITIES

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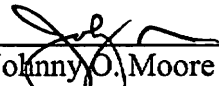
Robert J. Kapolka
Director, Environment, Safety & Health
Oak Ridge Institute for Science and Education

5-10-2007
date



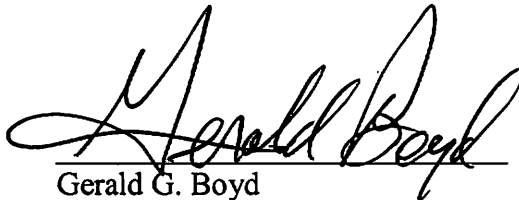
Ronald D. Townsend
Director
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Johnny O. Moore
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Gerald G. Boyd
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5/22/07
date

**OAK RIDGE ASSOCIATED UNIVERSITIES
OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION**

**10 CFR 851
WORKER SAFETY AND HEALTH PROTECTION PROGRAM**

Office of Science Program Elements & Review Criteria

1. Executive Summary

This Worker Safety and Health Program Description discusses how Oak Ridge Associated Universities (ORAU) approaches the development, management, and implementation of the worker safety and health program (WSHP) at the Oak Ridge Institute for Science and Education (ORISE). This program description documents the ORISE processes for compliance with worker safety and health regulatory requirements, including 10 CFR 851, Worker Safety and Health Program (10 CFR 851), and provides cross-references to implementing systems, programs, and subject areas. It also describes how ORAU integrates worker safety and health requirements with other related worker protection activities and the ORISE Integrated Safety Management System (ISMS). This program description also illustrates the ORISE framework for effective worker protection and the integration of safety- and health-related functional areas, including construction safety, fire protection, pressure safety, industrial hygiene, occupational medicine, motor vehicle safety, and electrical safety.

The information in this program description is intended to provide an understanding of the overall approach to worker safety and health and to show how worker safety and health requirements flow down to workers. This document is not an implementing procedure that drives performance relative to specific requirements, or establishes requirements, but rather serves as a description of the WSHP and its interfaces. Appendix A contains a crosswalk of requirements from 10 CFR 851 and the respective implementing documents at ORISE. Workers use the implementing documents referenced in Appendix A for specific requirements.

ORISE is designated as a non-nuclear, radiological low-hazard facility. Its focus is on scientific initiatives to research health risks from occupational hazards, assess environmental cleanup, respond to radiation medical emergencies, support national security and emergency preparedness, and educate the next generation of scientists.

As part of its commitment to maintaining the highest standards of worker safety and health, ORISE has pursued and received two key honors for its safety and environmental management programs. First, in August 2003, ORISE submitted an application to the Department of Energy (DOE) for inclusion in the Voluntary Protection Program (VPP). Following a site visit in December of that year, DOE awarded ORISE with VPP Star Site status on August 9, 2004, as just the twenty-first organization within the DOE complex to receive this designation.

Then in March 2005, ORISE applied for and began the process of registration for ISO 14001:2004. After a lengthy review of the organization's Environmental Management System, followed by a site visit, ORISE earned ISO 14001 registration in April 2005.

In order to establish and implement appropriate standards for environment, safety and health (ES&H), ORAU uses the DOE-authorized Work Smart Standard (WSS) process for all work performed under the ORISE contract. This process identifies a set of standards that, when successfully implemented, provides reasonable assurance that the safety and health of workers, the public, and the environment are protected.

ORAU initiated the WSS process in 1999, starting with a comprehensive analysis of the work that it performs in fulfillment of the ORISE contract. This analysis was conducted by a team consisting of program representatives, ES&H support staff, and DOE subject matter experts (SMEs). The team identified potential work hazards and the operational and administrative controls required to conduct work safely. On that basis, a set of ES&H requirements was identified and documented. The set included all applicable statutory and regulatory requirements, plus those DOE orders and other consensus standards that were determined to be appropriate for incorporation as contractual requirements to ensure adequate protection of workers, the public, and the environment.

The WSS set is published as the *ORISE Work Smart Standards Set for Environment, Safety, and Health* and is available on the ORAU intranet as well as the ORISE site on the World Wide Web at <http://orise.orau.gov/safety/wss-current.htm>. Changes in the approved WSS set are governed by change controls specified by DOE. The ORISE WSS set is updated annually or as new directives, regulations, and industry standards are released.

2. Scope/Exclusions

This program description applies to ORISE-managed, DOE-owned or -leased facilities, operations, and activities, and to ORISE employees and subcontractor personnel at ORISE-managed, DOE-owned or -leased facilities. This program description also demonstrates the methodology used by ORISE employees and its subcontractors at DOE facilities not managed by ORISE when the host facility does not have a DOE-approved WSHP. This program description applies to contractor and subcontractor employees at ORISE-managed, DOE-owned or -leased facilities as referenced in Appendix D. All of these facilities are located in Oak Ridge, Tennessee.

This description explains how worker safety and health requirements are implemented and managed including 10 CFR 851 and its referenced standards. Not all activities managed by ORAU are subject to 10 CFR 851. The DOE Office of General Counsel clarified the applicability of 10 CFR 851 to activities under the management and oversight of ORAU that are performed in facilities owned or leased by ORAU. Per the DOE legal opinion, activities managed by ORAU, including those that are in furtherance of the DOE mission, are not subject to 10 CFR 851 unless DOE “controls” the site. The opinion further states that DOE control requires that DOE either holds the lease or sets requirements for the lease.

Based on this ruling, some ORISE activities and locations are not under the scope of 10 CFR 851. In addition, the provisions of 10 CFR 851 do not apply to the following:

- Work at a DOE site that is regulated by the Occupational Safety and Health Administration (OSHA).
- Radiological hazards regulated by 10 CFR Parts 20, 820, 830 or 835.

- Transportation to or from a DOE site.
- Work at a DOE site that is not in furtherance of a DOE mission.
- Work that is not performed at a DOE-owned or -leased site.
- Activities by DOE personnel.
- Visitors, students, visiting scientists, research partners, and others who may be stipend recipients.
- Activities by foodservice or other similar vendors.
- Activities by suppliers of commercial items.
- Activities by subcontractors that are providing operation and maintenance services for commercial items (e.g., equipment technicians, fax/copier technicians, repair services for equipment under warranty, training activities for equipment operation).
- ORAU personnel at non-DOE controlled facilities, including, but not limited to, the following facilities:
 - 701 Scarboro Road
 - ORAU Main Campus

3. Integrated Safety Management System

A major concept of ISMS is the integration of safety awareness and good practices into all aspects of work. For ORISE, safety is an integral part of every job, not a stand-alone program. In fulfilling the ORISE contract, ORAU has adopted DOE's Guiding Principles and Core Functions of ISMS on a corporate level and in all the individual program/department ISMS plans. This is outlined in *ORAU Policy and Procedure ESH-100, Integrated Safety Management (ESH-100)* and fully detailed in the *Integrated Safety Management System Program Description*.

ORISE flows down requirements through a network of tailored ISMS plans for each program and department consistent with the practices established in the corporate documents. Each plan follows a standard format for describing how the unit manager and employees incorporate the Guiding Principles and Core Functions of ISMS into their day-to-day activities. All employees have access to ISMS documents electronically and in hard copy.

4. Flowdown of Worker Safety and Health Requirements

4.1 Overview

ORAU's safety requirements apply to all employees and subcontractors in ORISE-controlled facilities. As stated above, this is outlined in *ESH-100* and fully detailed in the *Integrated Safety Management System Program Description*. Planning and performing work in accordance with these established controls developed from requirements stated in the WSS set protects our workforce, the public, and the environment.

The *Integrated Safety Management System Program Description*, together with the *ORAU Health and Safety Manual*, *ORAU Radiation Protection Manual*, *ORAU Emergency Preparedness Manual*, and the *ORAU Environmental Management System* provide the global framework for integrating safety requirements into planning and performing work. They provide form and substance for the detailed, unit-level ISMS plans and procedures. Most ORAU employees work in low-hazard environments. However,

where hazards increase in severity or number, the formality, intensity, and level of controls and assurance measures also increase. For example, laboratories, shops, and field operations require redundancy in hazard controls.

The 10 CFR 851 requirements are conveyed through this mechanism. All work is performed in a manner consistent with these established mechanisms.

4.2 Technical Staff and ES&H Responsibilities

In the operation of ORISE, ORAU seeks to recruit, develop and retain the most qualified worker protection professionals to assist line management and organizational components in meeting worker safety and health goals and objectives. This is stated in *ORAU Policy and Procedure HR-400, Staffing*. The hiring of certified professionals and management support of the attainment of certifications by current staff is one way that ORAU ensures the quality of the WSHP. Presently, ORAU employs professionals certified in safety, industrial hygiene, health physics, and occupational nursing.

Other staff that have credentials in hazardous material management, training, transportation, and other disciplines are also available to support the WSHP. Under the *ORAU Policy and Procedure HR-810, Human Resources Development Plan (HR-810), Attachment 1*, ORAU provides for attainment and maintenance of professional certifications in order to maintain a quality ES&H staff.

4.3 Procurement Interface

ORAU's Procurement Services group includes in all of its subcontracts involving the performance of work on an ORAU site provisions requiring subcontractors to comply with ORAU's ES&H standards when such standards are mandated by law, regulation, the ORISE contract, or as necessary to ensure safe work practices.

ES&H considerations are addressed in the *ORAU Procurement Services and Guidelines Manual* and are essential elements of all contractual activities conducted at ORAU. It is ORAU policy to follow ES&H laws, regulations, and ORAU-adopted practices as described in *ESH-100*. No activity can be considered so urgent or so important that safety may be compromised. Within the *ESH-100* responsibilities, all staff members are responsible for maintaining a complete understanding of the safety requirements of their work place and assignments. Furthermore, important operational safety information for Procurement Services is contained in the Financial Operations Department ISMS Plan, which is available on ORAU's Safety 1st intranet site.

In the event that ORAU must procure the services of a subcontractor, specific guidelines as stated in the *ORAU Procurement Services Guidelines and Procedures Manual* are to be followed. All ORAU and ORISE subcontractor personnel have a right to a safe workplace and a right to inform line management if they consider a condition unsafe. *ESH-100* also explains the responsibilities of ORAU for on-site work performed by subcontractor personnel.

ORAU is accountable for the ES&H performance of its subcontractors. Each

contract specialist/buyer in Procurement Services will work with all parties to prevent and resolve potential hazardous work issues arising in the performance of each subcontract. The contract specialist/buyer in consultation with ES&H support staff will consider the appropriate procedures, clauses or handbooks to include in solicitations and subcontracts involving on-site work including the *ORAU Health & Safety Manual*, Facilities and Transportation Department (FTD) policies and procedures, Safeguards and Security policies, and environmental management procedures. This is stated in the *ORAU Procurement Services Guidelines and Procedures Manual*. Refer to Section 8, paragraph 4 of this manual for more detailed information on ES&H provisions for on-site work.

ORAU contract specialists/buyers use the *Subcontract Safety Clause Matrix* when acquiring materials, services and construction with ES&H implications to ensure the appropriate ES&H provisions and clauses are included in the subcontract. As an additional measure, the *Visitor and Subcontractor Handbook* is also distributed to subcontractors for general compliance issues.

4.4 Types of Flowdown

Within the ORAU and ORISE boundaries, there is only one type of flowdown of ES&H guidelines. All employees or subcontractors are ultimately bound by *ESH-100* and the ORAU WSHIP where applicable. This is the overarching guideline for all of our missions. In the case of subcontract employees, guidelines for safety performance are the same as for regular full-time ORAU employees.

4.5 Subcontractor Safety and Review

Construction subcontractors build new facilities or modify existing facilities under construction contracts using their own supervisory personnel. ORAU maintains a comprehensive construction safety program, which is documented in procedure *FMS-7, Safe Subcontractor Work (FMS-7)*. This procedure requires major subcontractors to comply with applicable ES&H requirements as stated in *ESH-100*. As determined by the ES&H director, plans must be approved before work can start. Per *FMS-7*, both ES&H SMEs and FTD construction and maintenance managers who understand the scope and nature of the work being contracted analyze the hazards involved and agree upon the set of applicable ES&H requirements prior to the arrival of the subcontractors on site. FTD project managers and other construction managers enforce compliance with these safety plans. Additionally, ES&H staff perform unannounced inspections of construction sites on a regular basis. Finally, before any new or modified work is initiated, an *ISM Pre-Job Hazard Analysis Checklist* and an *ISM Plan for New or Modified Work* must be completed and approved by both program management and ES&H SMEs.

For construction or other business contracts through the procurement process, ORAU uses a Performance Based Safety Target Construction Subcontract in all construction-related contracts as stated in the *ORAU Procurement Services Guidelines and Procedures Manual* including the *Subcontract Safety Clause Matrix* :

1. The successful subcontractor must “qualify” to be a viable candidate for safe

work on an ORAU or ORISE site by meeting a stipulated minimum Experience Modification Rate (EMR) rating.

2. During the life of the contract, ORAU will make payments aggregating up to 90 percent of the contract amount and hold back amounts on each invoice aggregating to 10 percent of the face amount of the subcontract.
3. The only condition under which the subcontractor can collect the full 10 percent retainage at the end of the contract is if the job is completed safely with no recordable—as defined by OSHA—accidents. The rate of permanent reduction of payments under the subcontract for each official recorded and OSHA-reported accident shall be five percent of the then current balance of ten percent retainer.

For each officially-recorded accident, the subcontractor agrees in advance to a reduction of a portion of the 10 percent retainage, which computes to one-half of one percent of the face value of the contract. The subcontractor may experience a reduction in final payment aggregating up to five percent of the face amount of the subcontract should multiple recordable and OSHA-recordable accidents occur under this subcontract. The contract specialist will approve final payment. The contract specialist may, depending on circumstances, choose to use his/her sole discretion to mitigate any individual reduction levied by the above formula by further reducing the assessment by up to 50 percent, resulting in an actual reduction equal to one-fourth of one percent of the face amount of the subcontract award. The process for reviewing subcontractor safety and health programs is described in FMS-7.

To summarize the procedure, once the engineering designs and scope of the project is finalized, the designs are reviewed by FTD engineering and architecture personnel. After their review, the plans are reviewed by ES&H personnel to determine if applicable safety issues are addressed. After this approval, a Request For Proposal (RFP) solicitation package is submitted for subcontractor bids. In addition, throughout the project, inspections by FTD and ES&H personnel are performed to ensure that safety and health procedures are being followed.

4.6 Lower Tier Subcontractors

ORAU applies ES&H requirements to activities involving service providers, guest workers, and visitors, on a case-by-case basis. Subcontracts for services are governed by the *Visitor and Subcontractor Handbook*. These requirements are inserted into all service subcontract documents and specify that all subcontractors will follow applicable ES&H requirements and protect the interests of ORAU and DOE. However, these visitors are not governed by the compliance standards of 10 CFR 851.

Guest workers and students on occasion work at ORISE on a temporary basis in close collaboration with a program manager or specialist, sometimes without remuneration. As with all regular employees, they are required to follow all ES&H requirements covered under *ESH-100*, and the ORAU host is responsible for ensuring that they meet these requirements, or that they are escorted or supervised by fully-qualified individuals.

The *Visitor and Subcontractor Handbook* provides pertinent ES&H information to

accommodate this work. Visitors and subcontractors are also provided a safety and security brochure on their first visit to ORAU facilities in order to orient these persons to the safety culture expected throughout their stay.

5. Implementing Processes

5.1 Overview

ORAU will provide a workplace that is free from recognized hazards that are causing or have the potential to cause death or serious physical harm to workers. This includes exposures to hazardous substances or conditions. This provision is addressed through this program description and the health and safety policies and procedures for ORISE. Included in these policies and procedures are the following broad-based principles:

- Provide a safe and healthy workplace by developing and implementing work processes and equipment that abate hazards.
- Maintain a culture where individuals performing work understand and support the concept that all injuries are preventable.
- Comply with applicable requirements for performing work and work-related activities on and off site, including requirements in the ORISE WSS set.
- Comply with the applicable requirements of the Rule by ensuring that all work performed by subcontractors in a 10 CFR 851 covered workplace complies with established requirements.

ORAU intends to provide continual improvement and remain in compliance with the rule when new or modified orders are issued. This is performed through the ORAU General Counsel's office. Listings of the directives that are applicable to ORAU are cited on the ORISE contract on Attachment D, Baseline List of Required Compliance Documents. Additions, deletions, and updates to Attachment D are made quarterly by the General Counsel's office in coordination with the DOE/Oak Ridge Operations (ORO), Directives Management Group. Any new or modified directives are then sent to the ES&H office to determine applicability for modification of existing policies or procedures. If a compliance order is issued pursuant to 851.4, ORAU senior management shall direct that an investigation commence as to the conditions applicable to the compliance order and that, if needed, corrections be implemented as soon as is feasible.

5.2 WSH Program – General Requirements (10 CFR 851.10) Management Responsibilities

ORAU subscribes to the philosophy that line management is responsible for safety. This is outlined in *ESH-100* and fully expressed in the *ORISE Integrated Safety Management System Description*. However, it is clear that management needs support when implementing the WSHP. ORAU holds management, staff, and subcontractors accountable for worker safety and health, and each has a significant role in implementing this program. It is ORAU's expectation that employees and subcontractors will follow the requirements set forth in the WSS set and use specified work controls to prevent occupational injury and illness. ORAU holds both managers

and employees accountable for adherence to worker safety and health requirements. Management communicates expectations of individual roles and responsibilities through assignment of workers in their Individual Performance Plans. ORAU has a comprehensive employee performance assessment program in place for all employees, consisting of a midyear progress report and a year-end formal assessment. This process is described fully in ORAU's Performance Management Program.

Accountability of personal performance is also addressed in *ORAU Policy and Procedure HR-900, Employee Corrective Action*. This policy provides a framework, process, and guidelines for employees and managers to improve and correct work performance and behavior, identify areas for professional growth, increase productivity, and enhance the overall work environment. When needed, it also provides for progressive disciplinary action.

Similarly, worker protection performance goals and objectives for subcontractors are established and contained in contract documents. Subcontractors are held accountable for worker protection performance through contract provisions that include the option to remove subcontractors' employees or termination of the subcontract. This is stated in the *ORAU Procurement Services Guidelines and Procedures Manual*.

Several health and safety codes and standards, including National Fire Protection Association (NFPA) standards, allow for the designation of an Authority Having Jurisdiction (AHJ). For example, NFPA 70 defines the AHJ as "the organization, office, or individual responsible for approving equipment, materials, and installation, or a procedure." NFPA 1 more globally defines the AHJ as "... an organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure." In general, NFPA codes and standards contain several provisions that allow the AHJ to approve alternatives that provide equivalent levels of protection, i.e., "equivalencies" to the levels provided by the standard.

The ORISE WSHP recognizes the responsibility of the designated ORISE AHJ to resolve implementation issues and approve equivalencies related to fire protection and electrical safety/design as allowed by codes and standards. The ORISE ES&H director is the designated AHJ for this purpose. The ORISE AHJ may delegate to other qualified individuals such powers as necessary for the proper administration and enforcement of the ORISE fire protection and electrical safety programs. As appropriate, the ORISE AHJ consults with the AHJ for the City of Oak Ridge and DOE/ORO as appropriate.

Worker Involvement

The ORAU Values Statement declares that "employees are our most valuable resource." This value is demonstrated in many ways, one of the strongest being the "Safety 1st" approach to work completed at ORISE. Employees are required to be involved in the health and safety process and encouraged to be as involved as they are willing to be.

Authority to suspend and/or stop work is extended to all ORAU employees, guest workers, students, and subcontractor employees as described in the responsibilities section of ESH-100. Without fear of reprisal, employees are encouraged to approach all work with caution and to satisfy themselves that it is safe to proceed. Management empowers all employees to request and receive results of all inspections and accident investigations as described in the responsibilities section of *ESH-100*, and to understand the right to refuse to perform work that is unsafe, even if directed to do so by supervisors or other persons.

Many opportunities are provided to employees to become involved in ORISE safety activities, including the following:

- Being involved with their natural work teams.
- Attending and participating in staff meetings.
- Initiating informal communications with their immediate manager.
- Contacting SME support staff.
- Developing Job Hazard Analyses (JHAs).
- Participating in accident investigations and near-miss critiques.
- Participating in safety committees.

ORISE maintains processes for encouraging and acting on employee suggestions and for improving worker safety and health. The Safety 1st Web site provides tools to enable workers to easily report safety concerns or questions, anonymously if desired. The Web site also provides the employee with access to the WSHP, all standards, policies, procedures, or controls that are applicable to operations, and other pertinent information or links to applicable DOE safety and health resources. Posters and other informational devices, along with the annual posting of the OSHA 300 and the Form 301 log can be found throughout the ORAU workplace on public bulletin boards. The ORAU President's Line allows employees to submit questions or comments on any work-related topic directly to the president of ORAU. Mechanisms are provided for feedback as appropriate as determined by the president of ORAU with the counsel of the ES&H director. Also, suggestions for the improvement of the ORAU WSHP or to submit a safety question can be found on the ORAU intranet site under "How To Raise an Issue." Issues may also be presented through the employee's supervisor. All issues, concerns or recommendations presented by employees of ORAU are free from reprisal as stated in *ESH-100*.

5.3 Development and Approval of the WHS (10 CFR 850.11)

5.3.1 Preparation, Evaluation and Approval

This program description was developed with the active participation of ORISE management, ORAU Safety Council, legal counsel, procurement specialists, health and safety SMEs, and the ORAU Site Safety Representatives. Close coordination of the local DOE site office and the DOE Office of Science was maintained during the entire process.

Procedures, program descriptions, management system descriptions, subject areas, and other implementing documents listed in this program description are not incorporated by reference, or made a part of this document.

5.3.2 Coordination with Other Contractors and Labor Organizations

ORAU is the prime contractor for work performed at ORISE. As such, ORAU is responsible for all work that is performed at ORISE. ORISE management staff meets regularly with other DOE prime contractors to discuss issues of common concern and ES&H issues. Employees at ORISE are not represented by collective bargaining units.

Through memoranda of understanding and other agreements with other DOE site contractors, ORAU provides postgraduates, students, and employees that work at other DOE sites. Pursuant to specific requirements of the ORISE contract, these individuals must follow the work practices and WSHPs established by these other sites and are under the control of the respective contractor at those sites. See Contract DE-AC05-06OR23100, Clause H.3. Also, if contractor employees from other sites are used at ORISE, these employees will be required to follow ORAU's WSHP as noted in the *Visitor and Subcontractor Handbook*.

5.3.3 Program Updates

ORAU will submit an update to the appropriate DOE field element for approval whenever a significant change or addition to the program is made. A change will be submitted to DOE if a hazard associated with a change in the worksite or processes, or any newly recognized hazards, are not effectively controlled by the measures in the currently approved WSHP. Changes will not be implemented until approved. ORAU will submit annually either an updated WSHP for approval or a letter stating that no changes are necessary in the current program in advance of the anniversary of the previous approval.

5.4 Implementation (10 CFR 851.12)

In its implementation of 10 CFR 851, ORAU will take all necessary protective actions that may be necessary consistent with both the letter and the spirit of the regulation to ensure the adequate protection of its workers. This will include the implementation and maintenance of a written worker protection program that provides a place of employment free from recognized hazards that are causing or are likely to cause death or serious physical harm to employees. This is stated in *ESH-100*.

5.5 Compliance (10 CFR 851.13)

ORAU will achieve compliance with the provisions of 10 CFR 851 by no later than May 25, 2007, or earlier as determined by DOE. This is stated in *ESH-100*.

5.6 Worker Protection Goals and Objectives, Management Responsibilities, Worker Rights and Responsibilities, and System to Ensure Compliance with Established Work Practices (10 CFR 851.20)

The ORAU Safety Council annually prepares an emphasis plan for the following year. This plan is published as the ES&H Thrust document and is used as an institutional planning guide for ISMS implementation. Each item included in the Thrust documents has been expanded with itemized expectations. These expectations serve as a plan of action and a guide for assessing program and department performance. The assessments are shared with all employees on ORAU's Safety 1st intranet site.

Management responsibilities, worker rights and responsibilities, and systems to ensure compliance with established work practices are addressed in *ESH-100*. Individual WSHIP responsibilities within the ES&H office are assigned by the ES&H director according to the individual's knowledge and area of expertise. The ES&H director assesses the individual's performance every six months. This method of individual performance is documented through the ORAU Individual Performance Plan as stated in policy *ORAU Policy and Procedure HR-925, Performance Management*.

As required by 10 CFR 851, required program posters have been physically placed on official bulletin boards and on electronic Web sites accessible to all workers.

5.7 Hazard Identification and Assessment (10 CFR 851.21)

Hazard identification and assessment begins with *ESH-100*, which directs the use of ISMS in all daily operations. ORAU managers ensure that hazards are addressed at all stages of work planning and performance. At the institutional level, all known hazards with a potential to impact ORISE operations have been assessed and analyzed. The results are listed in the *ORAU/ORISE Hazards Survey*. This comprehensive assessment is used as a building-specific tool for the evaluation, design and control of potential hazards that could adversely impact workers, the public, or the environment with a prioritization given to risk as determined by the ORISE SMEs.

The *Hazards Survey* serves a two-fold purpose. It is an inventory of potential sources of occupational exposure and environmental damage. It also serves as a planning guide for emergency preparedness and response actions. The *Hazards Survey* provides a basis for the individual procedures and plans in the *ORAU Health & Safety Manual*. Additionally, the *Industrial Hygiene Monitoring Procedure* uses a risk-based, quantitative method to obtain baseline information on workers who are potentially exposed to chemical or physical workplace hazards. Potential exposure situations are assessed, monitored if necessary, documented, and recorded. Employees have the right to observe any monitoring or measuring of operations, be provided with the results and explanation of their own results, and promptly receive notification of overexposure as described in ORAU's *Health & Safety Manual, Industrial Hygiene Monitoring Procedure*. Operations are then evaluated to establish procedures or make adjustments to current ones. When modifications are made to existing facilities and/or equipment, or in the design of new facilities, the ES&H office along with FTD work with Procurement Services under the *Subcontract Safety Clause Matrix* to identify potential problems and hazards associated with the modifications.

At the program and department level, the primary method used to identify hazards is contained within each work unit's ISMS plan; presently, there are 20 unit plans.

These plans are tailored to the facilities and circumstances of the work that is performed, and each program/department lists its own potential hazards. In areas where hazardous materials are stored or used, inventories are maintained to ensure that Material Safety Data Sheet (MSDS) collections are complete, current, and readily accessible to all employees. Postings are required for all areas where radiological substances and hazardous materials are stored or used. Additionally, ES&H SMEs must approve the purchase of all chemical and radiological materials, as stated in the *Procurement Services and Guidelines Manual*. Whenever there is a need to coordinate safety and radiological interests, the ES&H department employs the *Hazardous Work Authorization Procedure* (HWA) as outlined in the *ORAU Health & Safety Manual*. The intent of the HWA is to provide a comprehensive permit to cover all types of hazardous work at ORAU in accomplishing the goals of *ESH-100*. The HWA combines and includes the following permits: Radiation Work Permit (RWP), Industrial Hygiene Work Permit (IHWP), Confined Space Entry Permit (CSEP), and Burn Permit.

At the activity level, workers use JHAs extensively. Presently, there are 140 JHAs covering work performed at ORISE. JHAs are prepared, reviewed and validated in accordance with provisions contained within the *Job Hazard Analysis Procedure* located in the *ORAU Health & Safety Manual*. Copies of JHAs are available to all employees electronically, and hard copies are maintained where deemed appropriate.

Facilities that will be permanently closed, demolished, or subject to title transfer are a rare occurrence at ORISE, yet represent special circumstances. In the event that ORISE has a facility that comes under this categorization, ORAU will implement appropriate abatement controls under the *ORAU Health & Safety Manual* and through the appropriate channels within the scope of the *ORAU Procurement Services and Guidelines Manual*. ORAU will submit to the appropriate DOE field element a list of closure facility hazards and the established controls within 90 days after identifying such hazards.

Finally, the ES&H office performs monthly statistical analyses of accident and near-miss reporting data and compares this information with specific DOE targets used across the DOE complex. This information is used to predict potentially hazardous trends in order to prevent recurrence.

5.8 Hazard Prevention and Abatement (10 CFR 851.22)

Hazard prevention and abatement is an integral component of the ORAU WSHIP in order to protect workers from potential and/or current hazards. This program incorporates the core functions of the ISMS program as established under *ESH-100*. After hazards have been identified and prioritized according to risk using the *ORAU/ORISE Hazards Survey*, the *IH Monitoring Procedure*, and the HWA, they are assessed for all stages of work to be completed.

As much as is possible, hazards are eliminated from the workplace. When this is not possible, hazards are mitigated to the greatest degree possible through the use of the OSHA-endorsed hierarchy of engineering and administrative controls. These include the substitution with less hazardous materials, specialized ventilation, engineered

systems, and procedural controls. Personal protective equipment (PPE) is used appropriately as directed in the *ORAU Health & Safety Manual*, but not as a primary or exclusive control for hazard mitigation.

As mentioned previously in the Hazard Identification and Assessment section, JHAs are used extensively both to identify hazards and to implement controls for ongoing work for potentially hazardous activities. Work permits are used to analyze all work performed by Facilities Management Services (FMS), which is a sub-unit of FTD; subcontractors; and others to document required safety controls. Additionally, more rigorous project-specific health and safety plans are developed for the same purpose on the larger FMS projects. All employees are required to adhere to established safety policies, procedures and JHAs. As determined by SMEs, other safety controls are sometimes used. These include the use of radiation monitors/dosimeters, continuous air monitoring devices, fire watches, elevated work watches, and the requirement for conducting some work activities during off-normal business hours. Finally, all operations are conducted with long-term consideration and job-specific planning for environmental protection and preservation.

In addition to the above, FMS management, in conjunction with affected employees, has developed a number of departmental safety procedures aimed at addressing unique or particularly hazardous work activities. Examples are procedures *FMS-1, Safe Electrical Work Practices* and *FMS-2, Lockout / Tagout*. Also, FMS ensures that all employees and subcontractors are trained, experienced, skilled, and have the proper tools available to conduct their assigned work in a safe and efficient manner. To this end, resources for employee training, new and replacement tool purchases, and employee PPE are all factored into departmental operating budgets. Prospective subcontractors are required to provide for these items as part of their contract bids or bid proposals. All employees are encouraged to take an active role in the budgeting process by forwarding recommendations for improved tools and other safety suggestions to their respective team leaders or to FMS management.

When new work is planned or when work that is presently being performed is modified, managers are required to complete and submit an *ISM Pre-Job Hazard Checklist* form. This form identifies the basic expected hazards that would be found when the work is being performed. This must be completed before beginning any work that is not addressed in the program or department's ISMS plan. The function of the *ISM Pre-Job Hazard Checklist* form is to serve as a hazards inventory only and not as a plan or a work process control document. If a plan is required due to the potential hazards involved, the *ISM Plan for New or Modified Work* or a formal health and safety plan is also required. These plans are used to describe individual work process controls and to prioritize and implement abatement actions according to the potential risks. Also, if an individual health and safety plan or *ISM Plan for New or Modified Work* is required, individual procedures in the *ORAU Health & Safety Manual* are used to provide procedural instruction for hazard prevention.

As an integral and parallel function of the hazard abatement process, Procurement Services uses, as a part of the *Subcontract Safety Clause Matrix*, administrative controls that address hazards when the needs for equipment, products or services are presented.

5.9 Safety and Health Standards, including additional standards determined to be needed beyond those specified (10 CFR 851.23)

City of Oak Ridge Code of Ordinances, Title 7, Fire Protection

5.10 Applicable Functional Areas (10 CFR 851.24)

5.10.1 Construction Safety (Appendix C)

5.10.2 Fire Protection (Appendix C)

5.10.3 Explosive Safety (Appendix C)

5.10.4 Pressure Safety (Appendix C)

5.10.5 Fire Arms Safety (Appendix C)

5.10.6 Industrial Hygiene (Appendix C)

5.10.7 Biological Safety (Appendix C)

5.10.8 Occupational Medicine (Appendix C)

5.10.9 Motor Vehicle Safety (Appendix C)

5.10.10 Electrical Safety (Appendix C)

5.10.11 Other Functional Areas Needed to Address Workplace Hazards

5.10.12 Chronic Beryllium Disease Prevention Program (CBDPP) 10 CFR 850

5.11 Training and Information (10 CFR 851.25)

ORISE is committed to ensure workers are appropriately trained in safety and health hazards and worker protection. Responsibilities and accountability for training are described in *ESH-100*. Line management is responsible to ensure that staff members are technically competent to perform their assigned duties. ORISE establishes clear roles and responsibilities, which are then translated into training and qualification requirements.

Each ORISE worker has an individualized Required Training Checklist that is reviewed and revised annually to ensure that job qualifying training is completed. Training is specifically required in all job development roles and responsibilities as described in individual performance plans. Specific procedures as outlined in the *ESH-100* and JHAs. Overall responsibility for training of personnel is governed by *HR-810*.

Specific training may not be required for all employees. The number and type of training programs required for an employee depends upon the job/task that the employee performs. Initial required training for all employees includes ES&H Orientation, General New Employee Orientation, and Program/Department Orientation. This training is conducted on the day of sign up. Provisions for periodic training to ensure adequate knowledge of health and safety issues or when specific conditions change are provided through individual procedures and in specific parts of

the ORAU *Health and Safety Manual*.

Training for those individuals who have worker safety and health responsibilities are provided in specific job descriptions and individual performance plans as outlined in *HR-810, Attachment 1, Human Resources Development Guidelines*.

5.12 Recordkeeping and Reporting (10 CFR 851.26)

ORISE is committed to the accurate and complete reporting of worker safety and health information in accordance with established guidelines. These processes include the following:

- DOE Computerized Accident and Incident Reporting System (CAIRS) data reporting and trending of injury and illness reports consistent with DOE M 231.1 1A.
- Occurrence Reporting Processing System (ORPS) reporting of identifying occurrences.
- Lessons learned submission of significant events and processes as required per DOE Order 225.1A.
- Records management practices as contractually identified.
- Maintenance of hazard inventory information, hazard assessments, MSDSs, and chemical and radiological exposure measurements.

ORISE staff members who are responsible for these reporting processes are required to maintain the current knowledge required to conduct these operations. Recordkeeping and reporting responsibilities are assigned to the ES&H director in *ESH-100*. Provisions for ensuring the completion of investigations for all work-related accidents, illnesses, or injuries are described in *ESH-100* and in the *ORAU Health & Safety Manual* procedure *Reporting On-the-Job Injuries and Near Misses*. Specific retention of these records is governed by *ORAU Policy and Procedure FM-800, Records Management*. Information concerning the WSHP and related documentation is available to all employees and others as applicable as described in *ESH-100*.

5.13 Reference Sources (10 CFR 851.27)

Within the 10 CFR 851 rule, several materials and standards are incorporated by reference. These references are included in the ORAU WSS and are used as applicable in the ORAU WSHP.

6. Program Assessments

DOE-VPP/ISMS Self-Assessments are completed annually and forwarded to DOE-ORO in February of each year, as stated in *ESH-100*.

7. Variance Process

When 10 CFR 851 was promulgated in February 2006, ORAU formed a working group to guide and assist management in implementing the rule. The working group comprises a cross-section of employees. Membership of the working group includes

ES&H SMEs, members of management, legal counsel, Procurement Services staff members, and impacted workers. The working group met intermittently from July 2006 until April 2007. At these meetings, the group discussed that ORAU would be seeking a permanent variance to 10 CFR 851 Appendix A.8. Working group members had the opportunity to assist in developing this permanent variance request.

The matter was discussed on several occasions at ORAU Safety Council meetings. An announcement of the permanent variance request was sent by letter to all current potentially impacted subcontractors.

ORAU is seeking a permanent variance from the Occupational Medicine requirements for ORISE-affected subcontractors as contained in 10 CFR 851, Appendix A, Worker Safety and Health Functional Areas. This appendix establishes the mandatory requirements for implementing the applicable functional areas required by 10 CFR 851.24. Appendix A, Section 8, Occupational Medicine contains extensive requirements for establishing and providing comprehensive occupational medicine services to workers employed at a covered work place who (1) work on a DOE site for more than 30 days in a 12-month period; or (2) are enrolled for any length of time in a medical or exposure monitoring program required by this rule and/or any other applicable federal, state or local regulation or other obligation. In accordance with the rule's scope and applicability boundaries, the prime contractor is required to provide or flow down the requirements for comprehensive occupational medical services to its subcontractors at all levels.

The requirements for a comprehensive occupational medicine program are contained in Appendix A.8 and represent precisely the requirements that have been in the DOE Order 440.1A, Contractors Requirements Document (CRD) since March 27, 1998. ORAU has been implementing an effective, comprehensive occupational medicine program in accordance with the DOE Order 440.1A requirements for its contractor employees for many years. ORISE subcontractors have never participated in ORISE's occupational medicine program. The scope of the ORISE contract does not include provisions for ORAU to purchase medical malpractice insurance, which would be necessary if subcontractors were provided occupational medical services. Without medical malpractice insurance, ORAU's contract medical staff could be exposed to medical malpractice claims from subcontractor companies and their employees.

After approval of this variance request, ORISE will require through contract terms, conditions and special requirements that all subcontractors at any tier have an occupational medicine program under the direction of a licensed physician meeting the credentials requirements of Appendix A.8(b) and personnel providing health services meeting the credentials requirements of Appendix A.8(c). A written description of the subcontractor's occupational medicine program, including proof of staff credentials, will be a required submission under the subcontract. Each subcontractor's occupational medicine program contents will be determined by their occupational medicine director and based on the subcontractor's scope of work and associated hazards.

ORISE is fully implementing the requirements of 10 CFR 851 Appendix A.8, Occupational Medicine for prime contractor employees and is protective against

identified hazards. The subject of this variance request is the implementation of the occupational medicine requirements for ORISE subcontractors, at all sub-tier levels, for the Appendix A.8(d) through (k) requirements. Once approved, this variance request will allow each subcontractor's credentialed occupational medicine provider to determine what is required to provide for a safe and healthful workplace in accordance with the rule.

Pending the approval of this variance request in order to avoid non-compliance with 10 CFR 851, ORISE will temporarily include the 10 CFR 851 covered subcontractors under the ORISE Occupational Health program as provided for regular full-time employees.

8. Appendices

8.1 Acronyms, Abbreviations, and Initialisms

See Appendix E

8.2 List of Memorandum of Understandings & Agreements

None

8.3 Implementation Matrix for 10 CFR Part 851

See Appendix A.

8.4 List of Applicable Workplace Safety and Health Requirements from 10 CFR 851, Section 851.23 and Section 851.27

See Appendix B.

8.5 List of Other Applicable Workplace Safety and Health Requirements

Others as identified in Appendix B.

8.6 Lists of Closure Facility Hazards and Controls (10 CFR 851.21 (b))

None identified.

8.7 Equivalencies Granted Prior to Promulgation of the Rule in accordance with the Equivalence Provisions of the Codes or Standards (10 CFR 851.23)

None.

Appendix A

Crosswalk of 10 CFR 851 Requirements to ORISE Implementing Documents*

10 CFR 851 Section	General Requirements	ORISE Implementing Documents*
10 a	<p>(a) With respect to a covered workplace for which a contractor is responsible, the contractor must:</p> <p>(a)(1) Provide a place of employment that is free from recognized hazards that are causing or have the potential to cause death or serious physical harm to workers.</p> <p>(a)(2) Ensure that work is performed in accordance with:</p> <p>(a)(2)(i) All applicable requirements of this part; and"</p> <p>(a)(2)(ii) With the worker safety and health program for that workplace.</p>	<p><i>ORAU Worker Safety and Health Program Description (WSHPD)</i></p> <p><i>ORAU/ORISE Policy & Procedure ESH-100, Integrated Safety Management</i></p> <p><i>ORAU/ORISE Health and Safety Manual</i></p>
10 b	<p>(b) The written worker safety and health program must describe how the contractor complies with the:</p> <p>(b)(1) Requirements set forth in Subpart C of this part that are applicable to the hazards associated with the contractor's scope of work; and,</p> <p>(b)(2) Any compliance order issued by the Secretary pursuant to § 851.4.</p>	<p><i>WSHPD</i></p>
11 a	<p>(a) Preparation and submission of worker safety and health program. By February 26, 2007, contractors must submit to the appropriate Head of DOE Field Element for approval a written worker safety and health program that provides the methods for implementing the requirements of Subpart C of this part</p> <p>(a)(1) If a contractor is responsible for more than one covered workplace at a DOE site, the contractor must establish and maintain a single worker safety and health program for the covered workplaces for which the contractor is responsible.</p> <p>(a)(2) If more than one contractor is responsible for covered workplaces, each contractor must:</p> <p>(a)(2)(i) Establish and maintain a worker safety and health program for the workplaces for which the contractor is responsible; and</p> <p>(a)(2)(ii) Coordinate with the other contractors responsible for work at the covered workplaces to ensure that there are clear roles, responsibilities and procedures to ensure the safety and health of workers at multi-contractor workplaces.</p> <p>(a)(3)(i) The worker safety and health program must describe how the contractor will: (i) Comply with the requirements set forth in Subpart C of this part that are applicable to the covered workplace, including the methods for implementing those requirements; and</p> <p>(a)(3)(ii) Integrate the requirements set forth in Subpart C of this part that are applicable to a covered workplace with other related site-specific worker protection activities and with the integrated safety management system.</p>	<p><i>WSHPD</i></p> <p><i>ORISE Integrated Safety Management System Program Description (ISMSPD)</i></p>

10 CFR 851 Section	General Requirements	ORISE Implementing Documents*
11 b	<p>(b) DOE evaluation and approval. The Head of DOE Field Element must complete a review and provide written approval of the contractor's worker safety and health program, within 90 days of receiving the document. The worker safety and health program and any updates are deemed approved 90 days after submission if they are not specifically approved or rejected by DOE earlier.</p> <p>(b)(1) Beginning May 25, 2007, no work may be performed at a covered workplace unless an approved worker safety and health program is in place for the workplace.</p> <p>(b)(2) Contractors must send a copy of the approved program to the Assistant Secretary for Environment, Safety and Health.</p> <p>(b)(3) Contractors must furnish a copy of the approved worker safety and health program, upon written request, to the affected workers or their designated representatives.</p>	NA
11 c	<p>(C) Updates.</p> <p>(c)(1) Contractors must submit an update of the worker safety and health program to the appropriate Head of DOE Field Element, for review and approval whenever a significant change or addition to the program is made, or a change in contractors occurs.</p> <p>(c)(2) Contractors must submit annually to DOE either an updated worker safety and health program for approval or a letter stating that no changes are necessary in the currently approved worker safety and health program.</p> <p>(c)(3) Contractors must incorporate in the worker safety and health program any changes, conditions, or workplace safety and health standards directed by DOE consistent with the requirements of this part and DEAR 970.5204-2, Laws, Regulations and DOE Directives (December, 2000) and associated contract clauses.</p>	<p>WSHPD</p> <p>ISMSPD</p>
11 d	<p>(d) Labor Organizations. If a contractor employs or supervises workers who are represented for collective bargaining by a labor organization, the contractor must:</p> <p>(d)(1) Give the labor organization timely notice of the development and implementation of the worker safety and health program and any updates thereto; and</p> <p>(d)(2) Upon timely request, bargain concerning implementation of this part, consistent with the Federal labor laws.</p>	NA
12 a	Contractors must implement the requirements of this part.	WSHPD
12 b	Nothing in this part precludes a contractor from taking any additional protective action that is determined to be necessary to protect the safety and health of workers.	WSHPD
13 a	Contractors must achieve compliance with all the requirements of Subpart C of this part, and their approved worker safety and health program no later than May 25, 2007. Contractors may be required to comply contractually with the requirements of this rule before February 9, 2007.	NA
13 b	In the event a contractor has established a written safety and health program, an Integrated Safety Management System (ISMS) description pursuant to the DEAR Clause, or an approved Work Smart Standards (Work Smart Standards) process before the date of issuance of the final rule, the Contractor may use that program, description, or process as the worker safety and health program required by this part if the appropriate Head of the DOE Field Element approves such use on the basis of written documentation provided by the contractor that identifies the specific portions of the program, description, or process, including any additional requirements or implementation methods to be added to the existing program, description, or process, that satisfy the requirements of this part and that provide a workplace as safe and healthful as would be provided by the requirements of this part.	NA

10 CFR 851 Section	General Requirements	ORISE Implementing Documents*
13 c	Nothing in this part shall be construed to limit or otherwise affect contractual obligations of a contractor to comply with contractual requirements that are not inconsistent with the requirements of this part.	NA
20 a	<p>(a) Management responsibilities. Contractors are responsible for the safety and health of their workforce and must ensure that contractor management at a covered workplace:</p> <p>(a)(1) Establish written policy, goals, and objectives for the worker safety and health program;</p> <p>(a)(2) Use qualified worker safety and health staff (e.g. CIH, CSP) to direct and manage the program;</p> <p>(a)(3) Assign worker safety and health program responsibilities, evaluate personnel performance, and hold personnel accountable for worker safety and health performance;</p> <p>(a)(4) Provide mechanisms to involve workers and their elected representatives in the development of the worker safety and health program goals, objectives, and performance measures and in the identification and control of hazards in the workplace;</p> <p>(a)(5) Provide workers with access to information relevant to the worker safety and health program;</p> <p>(a)(6) Establish procedures for workers to report without reprisal job-related fatalities, injuries, illnesses, incidents, and hazards and make recommendations about appropriate ways to control these hazards;</p> <p>(a)(7) Provide prompt response to such reports and recommendations;</p> <p>(a)(8) Provide for regular communication with workers about workplace safety and health matters;</p> <p>(a)(9) Establish procedures to permit workers to stop work or decline to perform an assigned task because of a reasonable belief that the task poses an imminent risk of death, serious physical harm, or other serious hazard to workers, in circumstances where the workers believe that there is insufficient time to utilize normal hazard reporting and abatement procedures; and</p> <p>(a)(10) Inform workers of their rights and responsibility by the appropriate means, including posting the DOE-designated Worker Protection Poster in the workplace where it is accessible to all workers.</p>	<p>WSHPD</p> <p>ORAU/ORISE Policy & Procedure ESH-100, <i>Integrated Safety Management</i></p> <p>ISMSPD</p> <p>ORAU/ORISE Safety 1st Website</p> <p>ORAU/ORISE Health and Safety Manual <i>Employee Health & Safety Concerns</i> <i>Reporting On-the-Job Injuries and Near misses</i> <i>Suspend, Stop and Restart Work</i></p>

10 CFR 851 Section	General Requirements	ORISE Implementing Documents*
20 b	<p>(b) Worker rights and responsibilities Workers must comply with the requirements of this part, including the worker safety and health program, which are applicable to their own actions and conduct. Workers at a covered workplace have the right, without reprisal, to:</p> <p>(b)(1) Participate in activities described in this section on official time;</p> <p>(b)(2) Have access to:</p> <p>(b)(2)(i) DOE safety and health publications;</p> <p>(b)(2)(ii) The worker safety and health program for the covered workplace;</p> <p>(b)(2)(iii) The standards, controls, and procedures applicable to the covered workplace;</p> <p>(b)(2)(iv) The safety and health poster that informs the worker of relevant rights and responsibilities;</p> <p>(b)(2)(v) Limited information on any recordkeeping log (OSHA Form 300). Access is subject to Freedom of Information Act requirements and restrictions; and</p> <p>(b)(2)(vi) The DOE Form 5484.3 (the DOE equivalent to OSHA Form 301) that contains the employee's name as the injured or ill worker;</p> <p>(b)(3) Be notified when monitoring results indicate the worker was overexposed to hazardous materials;</p> <p>(b)(4) Observe monitoring or measuring of hazardous agents and have the results of their own exposure monitoring;</p> <p>(b)(5) Have a representative authorized by employees accompany the Director or his authorized personnel during the physical inspection of the workplace for the purpose of aiding the inspection. When no authorized employee representative is available, the Director or his authorized representative must consult, as appropriate, with employees on matters of worker safety and health;</p> <p>(b)(6) Request and receive results of inspections and accident investigations;</p> <p>(b)(7) Express concerns related to worker safety and health;</p> <p>(b)(8) Decline to perform an assigned task because of a reasonable belief that, under the circumstances, the task poses an imminent risk of death or serious physical harm to the worker coupled with a reasonable belief that there is insufficient time to seek effective redress through normal hazard reporting and abatement procedures; and</p> <p>(b)(9) Stop work when the worker discovers employee exposures to imminently dangerous conditions or other serious hazards; provided that any stop work authority must be exercised in a justifiable and responsible manner in accordance with procedures established in the approved worker safety and health program.</p>	<p>WSHPD</p> <p>ORAU/ORISE Safety 1st Website</p> <p>ORAU/ORISE Policy & Procedure ESH-100, Integrated Safety Management</p> <p>ORAU/ORISE Industrial Hygiene Monitoring Procedure</p> <p>ORAU/ORISE Health and Safety Manual Employee Health & Safety Concerns Reporting On-the-Job Injuries and Near misses Suspend, Stop and Restart Work Procedure Occurrence Reporting Procedure</p>
21	Hazard identification and assessment	
21 a	<p>(a) Contractors must establish procedures to identify existing and potential workplace hazards and assess the risk of associated workers injury and illness. Procedures must include methods to:</p> <p>(a)(1) Assess worker exposure to chemical, physical, biological, or safety workplace hazards through appropriate workplace monitoring;</p> <p>(a)(2) Document assessment for chemical, physical, biological, and safety workplace hazards using recognized exposure assessment and testing methodologies and using of accredited and certified laboratories;</p> <p>(a)(3) Record observations, testing and monitoring results;</p> <p>(a)(4) Analyze designs of new facilities and modifications to existing facilities and equipment for potential workplace hazards;</p> <p>(a)(5) Evaluate operations, procedures, and facilities to identify workplace hazards;</p> <p>(a)(6) Perform routine job hazard analyses;</p> <p>(a)(7) Review site safety and health experience information; and</p> <p>(a)(8) Consider interaction between workplace hazards and other hazards such as radiological hazards</p>	<p>WSHPD</p> <p>ORAU/ORISE Policy & Procedure ESH-100, Integrated Safety Management</p> <p>ISMSPD</p> <p>ORAU/ORISE Industrial Hygiene Monitoring Procedure</p>

10 CFR 851 Section	General Requirements	ORISE Implementing Documents*
		ORAU/ORISE Health and Safety Manual Job Hazard Analysis Procedure Hazardous Work Authorization Procedure Employee Health & Safety Concerns Suspend, Stop and Restart Work Procedure Occurrence Reporting Procedure
21	b (b) Contractors must submit to the Head of DOE Field Element a list of closure facility hazards and the established controls within 90 days after identifying such hazards. The Head of DOE Field Element, with concurrence by the Cognizant Secretarial Officer, has 90 days to accept the closure facility hazard controls or direct additional actions to either: (b)(1) Achieve technical compliance; or (b)(2) Provide additional controls to protect the workers.	ORAU/ORISE Health and Safety Manual
21	c Contractors must perform the activities identified in paragraph (a) of this section, initially to obtain baseline information and as often thereafter as necessary to ensure compliance with the requirements in this Subpart.	WSHPD ISMSPD ORAU/ORISE Policy & Procedure ESH-100, Integrated Safety Management ORAU/ORISE Industrial Hygiene Monitoring Procedure ORAU/ORISE Health and Safety Manual
22	Hazard prevention and abatement	
22	a (a) Contractors must establish and implement a hazard prevention and abatement process to ensure that all identified and potential hazards are prevented or abated in a timely manner. (a)(1) For hazards identified either in the facility design or during the development of procedures, controls must be incorporated in the appropriate facility design or procedure. (a)(2) For existing hazards identified in the workplace, contractors must: (a)(2)(i) Prioritize and implement abatement actions according to the risk to workers; (a)(2)(ii) Implement interim protective measures pending final abatement; and (a)(2)(iii) Protect workers from dangerous safety and health conditions.	WSHPD ORAU/ORISE Policy & Procedure ESH-100, Integrated Safety Management ISMSPD ORAU/ORISE Industrial Hygiene Monitoring Procedure

10. CFR 851 Section	General Requirements	ORISE Implementing Documents*
		OR-AU/ORISE Health and Safety Manual OR-AU/ORISE Policy & Procedure ESH-100, Integrated Safety Management ISMSPD OR-AU/ORISE Health and Safety Manual Job Hazard Analysis Procedure Hazardous Work Authorization Procedure
22 b	(b) Contractors must select hazard controls based on the following hierarchy: (b)(1) Elimination or substitution of the hazards where feasible and appropriate; (b)(2) Engineering controls where feasible and appropriate; (b)(3) Work practices and administrative controls that limit worker exposures; and (b)(4) Personal protective equipment.	WSHHPD OR-AU/ORISE Policy & Procedure ESH-100, Integrated Safety Management ISMSPD OR-AU/ORISE Industrial Hygiene Monitoring Procedure OR-AU/ORISE Health and Safety Manual PPE Procedure Respiratory Protection Program Procedure Chemical Hygiene Plan Hazard Communication Program
22 c	(c) Contractors must address hazards when selecting or purchasing equipment, products, and services.	WSHHPD OR-AU/ORISE Policy & Procedure ESH-100, Integrated Safety Management ISMSPD OR-AU/ORISE Health and Safety Manual Chemical Hygiene Plan Hazard Communication Program

10 CFR 851 Section	General Requirements	ORISE Implementing Documents*
		<i>Procurement Services and Guidelines Manual</i> <i>FMA-5 - New Equipment Identification and Information Requirements</i>
23	Safety and health standards	
23	a (a) Contractors must comply with the following safety and health standards that are applicable to the hazards at their covered workplace:	NA
23	a (a)(1) 10 CFR 850, "Chronic Beryllium Disease Prevention Program."	NA
23	a (a)(2) Title 29 CFR, Parts 1904.4 through 1904.11, 1904.29 through 1904.33; 1904.44, and 1904.46, "Recording and Reporting Occupational Injuries and Illnesses."	<i>WSHPD</i> <i>ORAU/ORISE Policy & Procedure ESH-100, Integrated Safety Management</i> <i>ORAU/ORISE Health and Safety Manual Reporting On-the-Job Injuries and Near misses Procedure</i> <i>Workers Compensation Procedure</i>
23	a (a)(3) Title 29 CFR, Part 1910, "Occupational Safety and Health Standards," excluding 29 CFR 1910.1096, "Ionizing Radiation."	<i>WSHPD</i> <i>ORAU/ORISE Policy & Procedure ESH-100, Integrated Safety Management</i> <i>ISMSPD</i> <i>ORAU/ORISE Health and Safety Manual</i>
23	a (a)(4) 29 CFR 1915, Shipyard Employment	NA
23	a (a)(5) 29 CFR 1917, Marine Terminals	NA
23	a (a)(6) 29 CFR 1918, Safety and Health Regulations for Longshoring.	NA

10 CFR 851 Section	General Requirements	ORISE Implementing Documents
23 a	(a)(7) 29 CFR 1926, Safety and Health Regulations for Construction.	<p>WSHPD</p> <p>ORAU/ORISE Policy & Procedure ESH-100, Integrated Safety Management</p> <p>ORAU/ORISE Health and Safety Manual</p> <p>ORAU/ORISE Visitor and Subcontractor Safety Handbook</p> <p>Facilities Management Services (FMS) Documents</p> <p>FMS-1 - Safe Electrical Work Practices</p> <p>FMS-2 - Lockout / Tagout</p> <p>FMS-4 - Compensatory Actions for Fire System Impairments</p> <p>FMS-5 - Hazardous Work Permitting</p> <p>FMS-6 - Safe Elevated Work Practices</p> <p>FMS-7 - Safe Subcontractor Work Appendix</p>
23 a	(a)(8) 29 CFR 1928, Occupational Safety and Health Standards for Agriculture.	<p>NA</p>
23 a	(a)(9) American Conference of Governmental Industrial Hygienists (ACGIH), "Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices," (2005) (incorporated by reference, see § 851.27) when the ACGIH Threshold Limit Values (TLVs) are lower (more protective) than permissible exposure limits in 29 CFR 1910. When the ACGIH TLVs are used as exposure limits, contractors must nonetheless comply with the other provisions of any applicable expanded health standard found in 29 CFR 1910.	<p>WSHPD</p> <p>ORAU/ORISE Policy & Procedure ESH-100, Integrated Safety Management</p> <p>ISMSPD</p> <p>ORAU/ORISE Industrial Hygiene Monitoring Procedure</p>

10 CFR 851 Section	General Requirements	ORISE Implementing Documents
		ORAU/ORISE Health and Safety Manual PIPE Procedure Respiratory Protection Program Chemical Hygiene Plan Hazard Communication Program
23	a	(a)(10) American National Standards Institute (ANSI) Z88.2, "American National Standard for Respiratory Protection," (1992) (incorporated by reference, see § 851.27). ORAU/ORISE Health and Safety Manual Respiratory Protection Program ORAU/ORISE Industrial Hygiene Monitoring Procedure
23	a	(a)(11) ANSI Z136.1, "Safe Use of Lasers," (2000) (incorporated by reference, see § 851.27). NA
23	a	(a)(12) ANSI Z49.1, Safety in Welding, Cutting and Allied Processes section 4.3 and E4.3 (1999). ORAU/ORISE Policy & Procedure ESH-100, Integrated Safety Management ORAU/ORISE Health and Safety Manual ORAU/ORISE Visitor and Subcontractor Safety Handbook FMS Documents FMS-1 - Safe Electrical Work Practices FMS-2 - Lockout / Tagout FMS-4 - Compensatory Actions for Fire System Impairments FMS-5 - Hazardous Work Permitting

10 CFR 851 Section	General Requirements	ORISE Implementing Documents
23 a	(a)(13) National Fire Protection Association (NFPA) 70, "National Electrical Code," (2005) (incorporated by reference, see § 851.27).	<p><i>ORAU/ORISE Health and Safety Manual</i> <i>Electrical Safety Procedures</i> <i>Facilities Maintenance Procedures</i></p> <p><i>FMS Documents</i> <i>FMS-1 - Safe Electrical Work Practices</i> <i>FMS-2 - Lockout / Tagout</i> <i>FMS-5 - New Equipment Identification and Information Requirements</i></p>
23 a	(a)(14) NFPA 70E, "Standard for Electrical Safety in the Workplace," (2004) (incorporated by reference, see § 851.27).	<p><i>ORAU/ORISE Health and Safety Manual</i> <i>Electrical Safety Procedures</i> <i>Facilities Maintenance Procedures</i></p> <p><i>FMS Documents</i> <i>FMS-1 - Safe Electrical Work Practices</i> <i>FMS-2 - Lockout / Tagout</i> <i>FMS-5 - New Equipment Identification and Information Requirements</i></p> <p><i>ORAU/ORISE Visitor and Subcontractor Safety Handbook</i></p>

10 CFR 851 Section	General Requirements	ORISE Implementing Documents*
23	<p>(b) Nothing in this part must be construed as relieving a contractor from complying with any additional specific safety and health requirement that it determines to be necessary to protect the safety and health of workers.</p>	<p>WSHDP ORAU/ORISE Policy & Procedure ESH-100, <i>Integrated Safety Management</i> ISMSPD ORAU/ORISE Safety 1st Website ORAU/ORISE Health and Safety Manual</p>
24	<p>Functional areas.</p>	
24	<p>(a) Contractors must have a structured approach to their worker safety and health program which at a minimum, include provisions for the following applicable functional areas in their worker safety and health program: construction safety; fire protection; firearms safety; explosives safety; pressure safety; electrical safety; industrial hygiene; occupational medicine; biological safety; and motor vehicle safety.</p>	<p>WSHDP <i>Procurement Services and Guidelines Manual – Subcontract Safety Clause Matrix</i></p>
24	<p>(b) In implementing the structured approach required by paragraph (a) of this section, contractors must comply with the applicable standards and provisions in Appendix A of this part, entitled "Worker Safety and Health Functional Areas."</p>	<p>WSHDP</p>
25	<p>Training and information</p>	
25	<p>(a) Contractors must develop and implement a worker safety and health training and information program to ensure that all workers exposed or potentially exposed to hazards are provided with the training and information on that hazard in order to perform their duties in a safe and healthful manner.</p>	<p>ORAU/ORISE Health and Safety Manual ORAU Policy & Procedure IIR-400, <i>Staffing</i></p>
25	<p>(b) The contractor must provide: (b)(1) Training and information for new worker before or at the time of initial assignment to a job involving exposure to a hazard; (b)(2) Periodic training as often as necessary to ensure that workers are adequately trained and informed; and (b)(3) Additional training when safety and health information or a change in workplace conditions indicates that a new or increased hazard exists.</p>	<p>ORAU/ORISE Health and Safety Manual ORAU Policy & Procedure IIR-400, <i>Staffing</i></p>
25	<p>(c) Contractors must provide training and information to workers who have worker safety and health program responsibilities that is necessary for them to carry out those responsibilities.</p>	<p>ORAU/ORISE Health and Safety Manual ORAU Policy & Procedure HR-400, <i>Staffing</i></p>

10 CFR 851 Section	General Requirements	ORISE/Implementing Documents
26	Recordkeeping and reporting	
26 a	<p>(a) Recordkeeping. Contractors must:</p> <p>(a)(1) Establish and maintain complete and accurate records of all hazard inventory information, hazard assessments, exposure measurements, and exposure controls.</p> <p>(a)(2) Ensure that the work-related injuries and illnesses of its workers and subcontractor workers are recorded and reported accurately and consistent with DOE Manual 231.1-1A, Environment, Safety and Health Reporting Manual, September 9, 2004 (incorporated by reference, see § 851.27).</p> <p>(a)(3) Comply with the injury and illness recordkeeping and reporting sections of the health standards in 851.23 unless otherwise directed in DOE Manual 231.1-1A.</p> <p>(a)(4) Not conceal nor destroy any information concerning non-compliance or potential noncompliance with the requirements of this part.</p>	<p>WSHPD</p> <p>ORAU/ORISE Policy & Procedure ESH-100, Integrated Safety Management</p> <p>ISMSPD</p> <p>ORAU/ORISE Industrial Hygiene Monitoring Procedure</p> <p>ORAU/ORISE Health and Safety Manual Employee Health & Safety Concerns Reporting On-the-Job Injuries and Near misses Workers Compensation Procedure</p>
26 b	<p>(b) Reporting and investigation. Contractors must:</p> <p>(b)(1) Report and investigate accidents, injuries & illnesses; and</p> <p>(b)(2) Analyze related data for trends and lessons learned (reference DOE Order 225.1A, Accident Investigations, November 26, 1997).</p>	<p>ISMSPD</p> <p>ORAU/ORISE Policy & Procedure ESH-100, Integrated Safety Management</p> <p>ORAU/ORISE Policy & Procedure ESH-150, Lessons Learned</p> <p>ORAU Policy & Procedure GP-1100, Occupational Medicine Workers Compensation Procedure</p> <p>ORAU/ORISE Health and Safety Manual Reporting On-the-Job Injuries and Near misses</p>
27	Reference sources	

10 CFR 851 Section	General Requirements	ORISE Implementing Documents*
27 a	<p>(a) Materials incorporated by reference.</p> <p>(a)(1) General. The following standards which are not otherwise set forth in part 851 are incorporated by reference and made a part of part 851. The standards listed in this section have been approved for incorporation by reference by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.</p> <p>(a)(2) Availability of standards. The standards incorporated by reference are available for inspection at:</p> <p>(a)(2)(i) National Archives and Records Administration (NARA). For more information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html</p> <p>(a)(2)(ii) U.S. Department of Energy, Office of Environment, Safety and Health, Forrestal Building, 1000 Independence Ave., SW., Washington, DC 20585.</p> <p>(a)(2)(iii) American National Standards Institute Headquarters, 25 West 43rd Street, New York, NY 10036. Telephone number: 12-642-4980, or go to: http://www.ansi.org.</p> <p>(a)(2)(iv) National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169. Telephone: 617 770-3000, or go to: http://www.nfpa.org.</p> <p>(a)(2)(v) American Conference of Governmental Industrial Hygienist (ACGIH), 1330 Kemper Meadow Drive, Cincinnati, OH 45240. Telephone number 513-742-2020, or go to: http://www.acgih.org.</p> <p>(a)(2)(vi) American Society of Mechanical Engineers (ASME), P.O. Box 2300 Fairfield, NJ 07007. Telephone: 800-843-2763, or go to: http://www.asme.org.</p>	NA
27 b	(b) List of standards incorporated by reference	NA
27 b	(b)(1) ANSI Z88.2, American National Standard Practices for Respiratory Protection, 2004.	<p>ORAU/ORISE Health and Safety Manual Respiratory Protection Program</p> <p>ORAU/ORISE Industrial Hygiene Monitoring Procedure</p>
27 b	(b)(2) ANSI Z136.1, Safe Use of Lasers, 2000.	NA
27 b	(b)(3) ANSI Z49.1, Safety in Welding, Cutting and Allied Processes, 1999.	<p>ORAU/ORISE Health and Safety Manual Respiratory Protection Program Hazardous Work Authorization PPE Procedure</p>

10 CFR 851 Section	General Requirements	ORISE Implementing Documents*
		<p><i>FMS Job Hazard Analyses</i></p> <p><i>ORAU/ORISE Industrial Hygiene Monitoring Procedure</i></p>
27 b	(b)(4) NFPA 70, National Electrical Code, 2005.	<p><i>ORAU/ORISE Health and Safety Manual</i> <i>Electrical Safety Procedures</i> <i>Facilities Maintenance Procedures</i></p> <p><i>FMS Documents</i> <i>FMS-1 - Safe Electrical Work Practices</i> <i>FMS-2 - Lockout / Tagout</i> <i>FMS-5 - New Equipment Identification and Information Requirements</i></p> <p><i>ORAU/ORISE Visitor and Subcontractor Safety Handbook</i></p>
27 b	(b)(5) NFPA 70E, Electrical Safety in the Workplace, 2004.	<p><i>ORAU/ORISE Health and Safety Manual</i> <i>Electrical Safety Procedures</i> <i>Facilities Maintenance Procedures</i></p> <p><i>FMS Documents</i> <i>FMS-1 - Safe Electrical Work Practices</i> <i>FMS-2 - Lockout / Tagout</i> <i>FMS-5 - New Equipment Identification and Information Requirements</i></p> <p><i>ORAU/ORISE Visitor and Subcontractor Safety Handbook</i></p>
27 b	(b)(6) ACGIH TLVs & BEIs (2005).	<p><i>WSHPD</i></p> <p><i>ORAU/ORISE Policy & Procedure ESH-100, Integrated Safety Management</i></p> <p><i>ISMSPD</i></p>

10/CHR-851 Section		General Requirements	ORISE Implementing Documents*
			ORAU/ORISE Industrial Hygiene Monitoring Procedure ORAU/ORISE Health and Safety Manual
27	b	(b)(7) ASME Boilers & Pressure Vessel Code	FTD Preventative Maintenance Schedule Procedures (ORAU has no boilers operating at or above 15 psi, which makes most identified codes and standards N/A)
27	b	(b)(8) ASME B31 ASME Code for Pressure Piping	N/A
27	b	(b)(8)(i) B31.1—2001— Power Piping, and B31.1a—2002— Addenda to ASME B31.1—2001;	N/A
27	b	(b)(8)(ii) B31.2—1968— Fuel Gas Piping;	N/A
27	b	(b)(8)(iii) B31.3—2002— Process Piping;	N/A
27	b	(b)(8)(iv) B31.4—2002— Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids;	N/A
27	b	(b)(8)(v) B31.5—2001— Refrigeration Piping and Heat Transfer Components, and B31.5a—2004, Addenda to ASME B31.5—2001;	N/A
41	b	(b)(8)(vi) B31.8—2003— Gas Transmission and Distribution Piping Systems;	N/A

10 CFR 851 Section		General Requirements	ORISE Implementing Documents*
27	b	(b)(8)(vii) B31.8S— 2001— Managing System Integrity of Gas Pipelines;	NA
27	b	(b)(8)(viii) B31.9— 1996— Building Services Piping;	NA
27	b	(b)(8)(ix) B31.11— 2002— Slurry Transportation Piping Systems; and	NA
27	b	(b)(8)(x) B31G— 1991— Manual for Determining Remaining Strength of Corroded Pipelines.	NA
27	b	(b)(9) Reference Sources – DOE M 231.1-1A	<p><i>ORAU/ORISE Policy & Procedure ESH-100, Integrated Safety Management</i></p> <p><i>ORAU/ORISE Health and Safety Manual</i> <i>Reporting On-the-Job Injuries and Near misses</i> <i>Suspend, Stop and Restart Work Procedure</i> <i>Occurrence Reporting Procedure</i></p>
27	b	(b)(10) DOE M 440.1-1, DOE Explosives Safety Manual, 1996	NA
Appendix A		Worker Safety & Health Functional Areas	
App.A.1		Construction Safety	

10 CFR 851 Section	General Requirements	ORISE Implementing Documents	
App A.1	a	<p>(a) For each separately definable construction activity (e.g., excavations, foundations, structural steel, roofing) the construction contractor must:</p> <p>(a)(1) Prepare and have approved by the construction manager an activity hazard analysis prior to commencement of affected work. Such analyses must:</p> <p>(a)(1)(i) Identify foreseeable hazards and planned protective measures;</p> <p>(a)(1)(ii) Address further hazards revealed by supplemental site information (e.g., site characterization data, as-built drawings) provided by the construction manager;</p> <p>(a)(1)(iii) Provide drawings and/or other documentation of protective measures for which applicable Occupational Safety and health Administration (OSHA) standards require preparation by a Professional engineer or other qualified professional, and</p> <p>(a)(1)(iv) Identify competent persons required for workplace inspections of the construction activity, where required by OSHA standards.</p> <p>(a)(2) Ensure workers are aware of foreseeable hazards and the protective measures described within the activity analysis prior to beginning work on the affected activity.</p> <p>(a)(3) Require that workers acknowledge being informed of the hazards and protective measures associated with assigned work activities. Those workers failing to utilize appropriate protective measures must be subject to the construction contractor's disciplinary process.</p>	<p>WSHPD</p> <p>ORAU/ORISE Health and Safety Manual</p> <p>ORAU/ORISE Visitor and Subcontractor Safety Handbook</p> <p>Procurement Services and Guidelines Manual -- Subcontract Safety Clause Matrix</p> <p>FMS Documents</p> <p>FMS-1 - Safe Electrical Work Practices</p> <p>FMS-2 - Lockout / Tagout</p> <p>FMS-4 - Compensatory Actions for Fire System Impairments</p> <p>FMS-5 - Hazardous Work Permitting</p>
App A.1	b	<p>(b) During periods of active construction (i.e., excluding weekends, weather delays, or other periods of work inactivity), the construction contractor must have a designated representative on the construction worksite who is knowledgeable of the project's hazards and has full authority to Act on behalf of the construction contractor. The contractor's designated representative must make frequent and regular inspections of the construction worksite to identify and correct any instances of noncompliance with project safety and health requirements.</p>	<p>WSHPD</p> <p>ORAU/ORISE Policy & Procedure ESH-100, Integrated Safety Management</p> <p>ISMSPD</p> <p>Procurement Services and Guidelines Manual -- Subcontract Safety Clause Matrix</p>
App A.1	c	<p>(c) Workers must be instructed to report to the construction contractor's designated representative, hazards not previously identified or evaluated. If immediate corrective action is not possible or the hazard falls outside of project scope, the construction contractor must immediately notify affected workers, post appropriate warning signs, implement needed interim control measures, and notify the construction manager of the action taken. The contractor or the designated representative must stop work in the affected area until appropriate protective measures are established.</p>	<p>WSHPD</p> <p>ORAU/ORISE Policy & Procedure ESH-100, Integrated Safety Management</p> <p>ISMSPD</p> <p>Procurement Services and Guidelines Manual -- Subcontract Safety Clause Matrix</p>

10 CFR 851 Section	General Requirements	ORISE Implementing Documents*
App A.1	<p>(d) The construction contractor must prepare a written construction project safety and health plan to implement the requirements of this section and obtain approval of the plan by the construction manager prior to commencement of any work covered by the plan. In the plan, the contractor must designate the individual(s) responsible for on-site implementation of the plan, specify qualifications for those individuals, and provide a list of those project activities for which subsequent hazard analyses are to be performed. The level of detail within the construction project safety and health plan should be commensurate with the size, complexity and risk level of the construction project. The content of this plan need not duplicate those provisions that were previously submitted and approved as required by § 851.11.</p>	<p>WSHPPD ORAU/ORISE Policy & Procedure ESH-100, Integrated Safety Management ISMSPD Procurement Services and Guidelines Manual -- Subcontract Safety Clause Matrix</p>

10 CFR 851 Section	General Requirements	ORISE Implementing Documents
App A	Fire Protection	
App A.2	<p>a (a) Contractors must implement a comprehensive fire safety and emergency response program to protect workers commensurate with the nature of the work that is performed. This includes appropriate facility and site-wide fire protection, fire alarm notification and egress features, and access to a fully staffed, trained, and equipped emergency response organization that is capable of responding in a timely and effective manner to site emergencies.</p>	<p><i>ORAU/ORISE Emergency Preparedness Manual</i></p> <p><i>ORAU/ORISE Health and Safety Manual</i> <i>Fire Safety Procedures</i> <i>Installation & Maintenance of Electric Space Heaters for Personal Use</i> <i>Storage Practices for Flammable/ Combustible Liquids</i> <i>Facilities Maintenance Procedure</i> <i>General Storage Practices</i></p> <p><i>ORAU/ORISE Visitor and Subcontractor Safety Handbook</i></p> <p><i>ORAU/ORISE Spill Prevention, Control and Countermeasures Plan</i></p> <p><i>FMS Documents</i> <i>FMS-1 - Safe Electrical Work Practices</i> <i>FMS-4 - Compensatory Actions for Fire System Impairments</i> <i>FMS-5 - Hazardous Work Permitting</i></p>
App A.2	<p>b (b) An acceptable fire protection program must include those fire protection criteria and procedures, analyses, hardware and systems, apparatus and equipment, and personnel that would comprehensively ensure that the objective in paragraph 2(a) of this section is met. This includes meeting applicable building codes and National Fire Protection Association codes and standards.</p>	<p><i>ORAU/ORISE Emergency Preparedness Manual</i></p> <p><i>ORAU/ORISE Health and Safety Manual</i> <i>Fire Safety Procedures</i> <i>Installation & Maintenance of Electric Space Heaters for Personal Use</i> <i>Storage Practices for Flammable/ Combustible Liquids</i> <i>Facilities Maintenance Procedure</i> <i>General Storage Practices</i></p> <p><i>ORAU/ORISE Visitor and Subcontractor Safety Handbook</i></p>

10 CFR 851 Section	General Requirements	ORISE Implementing Documents
		<p>ORAU/ORISE Spill Prevention, Control and Countermeasures Plan</p> <p>FMS Documents FMS-1 - Safe Electrical Work Practices FMS-4 - Compensatory Actions for Fire System Impairments FMS-5 - Hazardous Work Permitting</p>
App A Explosives Safety		
App A.3	a (a) Contractors responsible for the use of explosive materials must establish and implement a comprehensive explosives safety program.	NA
App A.3	b (b) Contractors must comply with the policy and requirements specified in the DOE Manual 440.1-1A, DOE Explosives Safety Manual, Contractor Requirements Document (Attachment 2), January 9, 2006 (incorporated by reference, see § 851.27). A Contractor may choose a successor version, if approved by DOE.	NA
App A.3	c (c) Contractors must determine the applicability of the explosives safety directive requirements to research and development laboratory type operations consistent with the DOE level of protection criteria described in the explosives safety directive.	NA
App A Pressure Safety		
App A.4	a (a) Contractors must establish safety policies and procedures to ensure that pressure systems are designed, fabricated, tested, inspected, maintained, repaired, and operated by trained and qualified personnel in accordance with applicable and sound engineering principles.	<p>FTD Preventative Maintenance Schedule Procedures</p> <p>(ORAU has no boilers operating at or above 15 psi, which makes most identified codes and standards N/A)</p>
App A.4	b (b) Contractors must ensure that all pressure vessels, boilers, air receivers, and supporting piping systems conform to: (b)(1) The applicable American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (2004); sections I through section XII including applicable Code Cases (incorporated by reference, see § 851.27). (b)(2) The applicable ASME B31 (Code for Pressure Piping) standards as indicated below; and or as indicated in paragraph (b)(3) of this section: (b)(2)(i) B31.1— 2001— Power Piping, and B31.1a— 2002— Addenda to ASME B31.1— 2001 (incorporated by reference, see § 851.27); (b)(2)(ii) B31.2— 1968— Fuel Gas Piping (incorporated by reference, see § 851.27); (b)(2)(iii) B31.3— 2002— Process Piping (incorporated by reference, see § 851.27); (b)(2)(iv) B31.4— 2002— Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids (incorporated by reference, see § 851.27); (b)(2)(v) B31.5— 2001— Refrigeration Piping and Heat Transfer Components, and B31.5a— 2004, Addenda to ASME B31.5— 2001	<p>FTD Preventative Maintenance Schedule Procedures</p> <p>(ORAU has no boilers operating at or above 15 psi, which makes most identified codes and standards N/A)</p>

10/CFR 851 Section	General Requirements	ORISE Implementing Documents
	(incorporated by reference, see § 851.27); (b)(2)(vi) B31.8— 2003— Gas Transmission and Distribution Piping Systems (incorporated by reference, see § 851.27); (b)(2)(vii) B31.8S— 2001— Managing System Integrity of Gas Pipelines (incorporated by reference, see § 851.27); (b)(2)(viii) B31.9— 1996— Building Services Piping (incorporated by reference, see § 851.27); (b)(2)(x) B31G— 1991— Manual for Determining Remaining Strength of Corroded Pipelines (incorporated by reference, see § 851.27). (b)(3) The strictest applicable state and local codes.	
App A.4	(c) When national consensus codes are not applicable (because of pressure range, vessel geometry, use of special materials, etc.), contractors must implement measures to provide equivalent protection and ensure a level of safety greater than or equal to the level of protection afforded by the ASME or applicable state or local code. Measures must include the following: (c)(1) Design drawings, sketches, and calculations must be reviewed and approved by a qualified independent design professional (i.e., professional engineer). Documented organizational peer review is acceptable. (c)(2) Qualified personnel must be used to perform examinations and inspections of materials, in-process fabrications, nondestructive tests, and acceptance test. (c)(3) Documentation, traceability, and accountability must be maintained for each pressure vessel or system, including descriptions of design, pressure conditions, testing, inspection, operation, repair, and maintenance.	<i>FTD Preventative Maintenance Schedule Procedures</i> <i>(ORAU has no boilers operating at or above 15 psi, which makes most identified codes and standards N/A)</i>
App A	Firearms Safety	
App A.5	(a) A contractor engaged in DOE activities involving the use of firearms must establish firearms safety policies and procedures for security operations, and training to ensure proper accident prevention controls are in place. (a)(1) Written procedures must address firearms safety, engineering and administrative controls, as well as personal protective equipment requirements. (a)(2) As a minimum, procedures must be established for: (a)(2)(i) Storage, handling, cleaning, inventory, and maintenance of firearms and associated ammunition; (a)(2)(ii) Activities such as loading, unloading, and exchanging firearms. These procedures must address use of bullet containment devices and those techniques to be used when no bullet containment device is available; (a)(2)(iii) Use and storage of pyrotechnics, explosives, and/or explosive projectiles; (a)(2)(iv) Handling misfires, duds, and unauthorized discharges; (a)(2)(v) Live fire training, qualification, and evaluation activities; (a)(2)(vi) Training and exercises using engagement simulation systems; (a)(2)(vii) Medical response at firearms training facilities; and (a)(2)(viii) Use of firing ranges by personnel other than DOE or DOE contractor protective forces personnel.	N/A
App A.5	(a) A contractor engaged in DOE activities involving the use of firearms must establish firearms safety policies and procedures for security operations, and training to ensure proper accident prevention controls are in place. (a)(1) Written procedures must address firearms safety, engineering and administrative controls, as well as personal protective equipment requirements. (a)(2) As a minimum, procedures must be established for: (a)(2)(i) Storage, handling, cleaning, inventory, and maintenance of firearms and associated ammunition; (a)(2)(ii) Activities such as loading, unloading, and exchanging firearms. These procedures must address use of bullet containment devices and those techniques to be used when no bullet containment device is available;	N/A

10 CFR 851 Section	General Requirements	ORISE Implementing Documents
	(a)(2)(iii) Use and storage of pyrotechnics, explosives, and/or explosive projectiles; (a)(2)(iv) Handling misfires, duds, and unauthorized discharges; (a)(2)(v) Live fire training, qualification, and evaluation activities; (a)(2)(vi) Training and exercises using engagement simulation systems; (a)(2)(vii) Medical response at firearms training facilities; and (a)(2)(viii) Use of firing ranges by personnel other than DOE or DOE contractor protective forces personnel.	
App A.5	b (b) Contractors must ensure that personnel responsible for the direction and operation of the firearms safety program are professionally qualified and have sufficient time and authority to implement the procedures under this section.	NA
App A.5	c (c) Contractors must ensure that firearms instructors and armorers have been certified by the Safeguards and Security National Training Center to conduct the level of activity provided. Personnel must not be allowed to conduct activities for which they have not been certified.	NA
App A.5	d (d) Contractors must conduct formal appraisals assessing implementation of procedures, personnel responsibilities, and duty assignments to ensure overall policy objectives and performance criteria are being met by qualified personnel.	NA

10 CFR 851 Section	General Requirements	ORISE Implementing Documents
App A.5	<p>e) Contractors must implement procedures related to firearms training, live fire range safety, qualification, and evaluation activities, including procedures requiring that:</p> <p>(e)(1) Personnel must successfully complete initial firearms safety training before being issued any firearms. Authorization to remain in armed status will continue only if the employee demonstrates the technical and practical knowledge of firearms safety semiannually;</p> <p>(e)(2) Authorized armed personnel must demonstrate through documented limited scope performance tests both technical and practical knowledge of firearms handling and safety on a semi-annual basis;</p> <p>(e)(3) All firearms training lesson plans must incorporate safety for all aspects of firearms training task performance standards. The lesson plans must follow the standards set forth by the Safeguards and Security Central Training Academy's standard training programs;</p> <p>(e)(4) Firearms safety briefings must immediately precede training, qualifications, and evaluation activities involving live fire and/or engagement simulation systems;</p> <p>(e)(5) A safety analysis approved by the Head of DOE Field Element must be developed for the facilities and operation of each live fire range prior to implementation of any new training, qualification, or evaluation activity. Results of these analyses must be incorporated into procedures, lesson plans, exercise plans, and limited scope performance tests;</p> <p>(e)(6) Firing range safety procedures must be conspicuously posted at all range facilities; and</p> <p>(e)(7) Live fire ranges, approved by the Head of DOE Field Element, must be properly sited to protect personnel on the range, as well as personnel and property not associated with the range.</p>	NA
App A.5	<p>f) Contractors must ensure that the transportation, handling, placarding, and storage of munitions conform to the applicable DOE requirements.</p>	NA
App A Industrial Hygiene		
App A.6	<p>Contractors must implement a comprehensive industrial hygiene program that includes at least the following elements:</p>	<p>WSHPD</p> <p>ORAU/ORISE Policy & Procedure ESH-100, Integrated Safety Management</p> <p>ISMSPD</p> <p>ORAU/ORISE Industrial Hygiene Monitoring Procedure</p> <p>ORAU/ORISE Health and Safety Manual PPE Procedure Respiratory Protection Program Procedure</p>

10 CFR 851 Section	General Requirements	ORISE Implementing Documents
		Chemical Hygiene Plan Hazard Communication Program
App A.6	a (a) Initial or baseline surveys and periodic resurveys and/or exposure monitoring as appropriate of all work areas or operations to identify and evaluate potential worker health risks;	ORAU/ORISE Health and Safety Manual ORAU/ORISE Industrial Hygiene Monitoring Procedure
App A.6	b (b) Coordination with planning and design personnel to anticipate and control health hazards that proposed facilities and operations would introduce;	WSHPD ORAU/ORISE Policy & Procedure ESH-100, Integrated Safety Management ISMSPD ORAU/ORISE Industrial Hygiene Monitoring Procedure ORAU/ORISE Health and Safety Manual Facilities Maintenance Procedure
App A.6	c (c) Coordination with cognizant occupational medical, environmental, health physics, and work planning professionals;	WSHPD ORAU/ORISE Policy & Procedure ESH-100, Integrated Safety Management ISMSPD ORAU/ORISE Industrial Hygiene Monitoring Procedure ORAU/ORISE Health and Safety Manual

10 CFR 851 Section	General Requirements	ORISE Implementing Documents
App A.6	d (d) Policies and procedures to mitigate the risk from identified and potential occupational carcinogens;	<p>ORAU/ORISE <i>Industrial Hygiene Monitoring Procedure</i></p> <p>ORAU/ORISE <i>Health and Safety Manual</i> <i>Asbestos Management</i> <i>Chemical Hygiene Plan</i> <i>Hazard Communication</i></p>
App A.6	e (e) Professionally and technically qualified industrial hygienists to manage and implement the industrial hygiene program; and	<p>WSHPD</p> <p>ORAU/ORISE <i>Policy & Procedure ESH-100, Integrated Safety Management</i></p> <p>ISMSPD</p> <p>ORAU/ORISE <i>Industrial Hygiene Monitoring Procedure</i></p> <p>ORAU/ORISE <i>Health and Safety Manual</i></p> <p>ORAU/ORISE <i>Policy & Procedure ESH-100, Integrated Safety Management</i></p> <p>ORAU/ORISE <i>Policy & Procedure IIR-400, Staffing</i></p> <p>ORAU/ORISE <i>Policy & Procedure HR-810, Human Resources Development</i></p>

10 CFR 851 Section	General Requirements	ORISE Implementing Documents
App A.6	<p>f (f) Use of respiratory protection equipment tested under the DOE Respirator Acceptance Program for Supplied-air Suits (DOE Technical Standard-1167-2003) when National Institute for Occupational Safety and Health-approved respiratory protection does not exist for DOE tasks that require such equipment. For security operations conducted in accordance with Presidential Decision Directive 39, U.S. POLICY ON COUNTER TERRORISM, use of Department of Defense military type masks for respiratory protection by security personnel is acceptable.</p>	NA
App A Biological Safety		
App A.7	<p>a (a) Contractors must establish and implement a biological safety program that:</p> <p>(a)(1) Establishes an Institutional Biosafety Committee (IBC) or equivalent. The IBC must:</p> <p>(a)(1)(i) Review any work with biological etiologic agents for compliance with applicable Centers for Disease Control and Prevention (CDC), National Institutes of Health (NIH), World Health Organization (WHO), and other International, Federal, State, and local guidelines and assess the containment level, facilities, procedures, practices, and training and expertise of personnel; and (a)(1)(ii) Review the site's security, safeguards, and emergency management plans and procedures to ensure they adequately consider work involving biological etiologic agents.</p> <p>(a)(2) Maintains an inventory and status of biological etiologic agents, and provide to the responsible field and area office, through the laboratory IBC (or its equivalent), an annual status report describing the status and inventory of biological etiologic agents and the biological safety program.</p> <p>(a)(3) Provides for submission to the appropriate Head of DOE Field Element, for review and concurrence before transmittal to the Centers for Disease Control and Prevention (CDC), each Laboratory Registration/Select Agent Program registration application package requesting registration of a laboratory facility for the purpose of transferring, receiving, or handling biological select agents.</p> <p>(a)(4) Provides for submission to the appropriate Head of DOE Field Element, a copy of each CDC Form EA-101, Transfer of Select Agents, upon initial submission of the Form EA-101 to a vendor or other supplier requesting or ordering a biological select agent for transfer, receipt, and handling in the registered facility. Submit to the appropriate Head of DOE Field Element the completed copy of the Form EA-101, documenting final disposition and/or destruction of the select agent, within 10 days of completion of the Form EA-101.</p> <p>(a)(5) Confirms that the site safeguards and security plans and emergency management programs address biological etiologic agents, with particular emphasis on biological select agents.</p> <p>(a)(6) Establishes an immunization policy for personnel working with biological etiologic agents based on the evaluation of risk and benefit of immunization.</p>	NA

10 CFR 851 Section	General Requirements	ORISE Implementing Documents
App A.7	(b) [Reserved]	NA
<i>Occupational Medicine</i>		
App A.8	(a) Contractors must establish and provide comprehensive occupational medicine services to workers employed at a covered work place who: (a)(1) Work on a DOE site for more than 30 days in a 12-month period; or (a)(2) Are enrolled for any length of time in a medical or exposure monitoring program required by this rule and/or any other applicable Federal, State or local regulation, or other obligation.	ORAU/ORISE Policy & Procedure GP-1100, <i>Occupational Medicine</i>
App A.8	(b) The occupational medicine services must be under the direction of a graduate of a school of medicine or osteopathy who is licensed for the practice of medicine in the state in which the site is located.	ORAU/ORISE Policy & Procedure GP-1100, <i>Occupational Medicine</i>
App A.8	(c) Occupational medical physicians, occupational health nurses, physician's assistants, nurse practitioners, psychologists, employee assistance counselors, and other occupational health personnel providing occupational medicine services must be licensed, registered, or certified as required by Federal or State law where employed.	ORAU/ORISE Policy & Procedure GP-1100, <i>Occupational Medicine</i>
App A.8	(d) Contractors must provide the occupational medicine providers access to hazard information by promoting its communication, coordination, and sharing among operating and environment, safety, and health protection organizations. (d)(1) Contractors must provide the occupational medicine providers with access to information on the following: (d)(1)(i) Current information about actual or potential work-related site hazards (chemical, radiological, physical, biological, or ergonomic); (d)(1)(ii) Employee job-task and hazard analysis information, including essential job functions; (d)(1)(iii) Actual or potential work-site exposures of each employee; and (d)(1)(iv) Personnel actions resulting in a change of job functions, hazards or exposures. (d)(2) Contractors must notify the occupational medicine providers when an employee has been absent because of an injury or illness for more than 5 consecutive workdays (or an equivalent time period for those individuals on an alternative work schedule); (d)(3) Contractors must provide the occupational medicine provider information on, and the opportunity to participate in, worker safety and health team meetings and committees; (d)(4) Contractors must provide occupational medicine providers access to the workplace for evaluation of job conditions and issues relating to workers' health.	ORAU/ORISE Policy & Procedure GP-1100, <i>Occupational Medicine</i>
App A.8	(e) A designated occupational medicine provider must: (e)(1) Plan and implement the occupation medicine services; and (e)(2) Participate in worker protection teams to build and maintain necessary partnerships among workers, their representatives, managers, and safety and health protection specialists in establishing and maintaining a safe and healthful workplace.	ORAU/ORISE Policy & Procedure GP-1100, <i>Occupational Medicine</i>

10 CFR 851 Section	General Requirements	ORISE Implementing Documents
App A.8	<p>(f) A record, containing any medical, health history, exposure history, and demographic data collected for the occupational medicine purposes, must be developed and maintained for each employee for whom medical services are provided. All occupational medical records must be maintained in accordance with Executive Order 13335, Incentives for the Use of Health Information Technology.</p> <p>(f)(1) Employee medical, psychological, and employee assistance program (EAP) records must be kept confidential, protected from unauthorized access, and stored under conditions that ensure their long-term preservation. Psychological records must be maintained separately from medical records and in the custody the designated psychologist in accordance with 10 CFR 712.38(b)(2).</p> <p>(f)(2) Access to these records must be provided in accordance with DOE regulations implementing the Privacy Act and the Energy Employees Occupational Illness Compensation Program Act.</p>	<p>ORAU/ORISE Policy & Procedure GP-1100, Occupational Medicine</p> <p>ORAU/ORISE Policy & Procedure HR-1005, Employee Assistance Program</p>
App A.8	<p>(g) The occupational medicine services provider must determine the content of the worker health evaluations, which must be conducted under the direction of a licensed physician, in accordance with current sound and acceptable medical practices and all pertinent statutory and regulatory requirements, such as the Americans with Disabilities Act.</p> <p>(g)(1) Workers must be informed of the purpose and nature of the medical evaluations and tests offered by the occupational medicine provider.</p> <p>(g)(1)(i) The purpose, nature and results of evaluations and tests must be clearly communicated verbally and in writing to each worker provided testing;</p> <p>(g)(1)(ii) The communication must be documented in the worker's medical record; and</p> <p>(g)(2) The following health evaluations must be conducted when determined necessary by the occupational medicine provider for the purpose of providing initial and continuing assessment of employee fitness for duty.</p> <p>(g)(2)(i) At the time of employment entrance or transfer to a job with new functions and hazards, a medical placement evaluation of the individual's general health and physical and psychological capacity to perform work will establish a baseline record of physical condition and assure fitness for duty.</p> <p>(g)(2)(ii) Periodic, hazard-based medical monitoring or qualification-based fitness for duty evaluations required by regulations and standards, or as recommended by the occupational medicine services provider, will be provided on the frequency required.</p> <p>(g)(2)(iii) Diagnostic examinations will evaluate employee's injuries and illnesses to determine work-relatedness, the applicability of medical restrictions, and referral for definitive care, as appropriate.</p> <p>(g)(2)(iv) After a work-related injury or illness or an absence due to any injury or illness lasting 5 or more consecutive workdays (or an equivalent time period for those individuals on an alternative work schedule), a return to work evaluation will determine the individual's physical and psychological capacity to perform work and return to duty.</p> <p>(g)(2)(v) At the time of separation from employment, individuals shall be offered a general health evaluation to establish a record of physical condition.</p>	<p>ORAU/ORISE Policy & Procedure GP-1100, Occupational Medicine</p>
App A.8	<p>(h) The occupational medicine provider must monitor ill and injured workers to facilitate their rehabilitation and safe return to work and to minimize lost time and its associated costs.</p> <p>(h)(1) The occupational medicine provider must place an individual under medical restrictions when health evaluations indicate that the worker should not perform certain job tasks. The occupational medicine provider must notify the worker and contractor management when employee work restrictions are imposed or removed.</p>	<p>ORAU/ORISE Policy & Procedure GP-1100, Occupational Medicine</p>

10 CFR 851 Section	General Requirements	ORISE Implementing Documents
App A.8	i (i) Occupational medicine provider physician and medical staff must, on a timely basis, communicate results of health evaluations to management and safety and health protection specialists to facilitate the mitigation of worksite hazards.	ORAU/ORISE Policy & Procedure GP-1100, Occupational Medicine
App A.8	j (j) The occupational medicine provider must include measures to identify and manage the principal preventable causes of premature morbidity and mortality affecting worker health and productivity. (j)(1) The contractor must include programs to prevent and manage these causes of morbidity when evaluations demonstrate their cost effectiveness. (j)(2) Contractors must make available to the occupational medicine provider appropriate access to information from health, disability, and other insurance plans (de-identified as necessary) in order to facilitate this process.	ORAU/ORISE Policy & Procedure GP-1100, Occupational Medicine
App A.8	k (k) The occupational medicine services provider must review and approve the medical and behavioral aspects of employee counseling and health promotional programs, including the following types: (k)(1) Contractor-sponsored or contractor supported EAPs; (k)(2) Contractor-sponsored or contractor supported alcohol and other substance abuse rehabilitation programs; and (k)(3) Contractor-sponsored or contractor supported wellness programs. (k)(4) The occupational medicine services provider must review the medical aspects of immunization programs, blood-borne pathogens programs, and bio-hazardous waste programs to evaluate their conformance to applicable guidelines. (k)(5) The occupational medicine services provider must develop and periodically review medical emergency response procedures included in site emergency and disaster preparedness plans. The medical emergency responses must be integrated with nearby community emergency and disaster plans.	ORAU/ORISE Policy & Procedure GP-1100, Occupational Medicine ORAU/ORISE Policy & Procedure HR-1005, Employee Assistance Program ORAU/ORISE Policy & Procedure ESH-525, Exposure Control Plan for Bloodborne Pathogens ORAU/ORISE Policy & Procedure HR-1050, Employee Assistance Program ORAU/ORISE Policy & Procedure HR-1010, Drug/Alcohol Free Workplace
App A Motor Vehicle Safety		
App A.9	a (a) Contractors must implement a motor vehicle safety program to protect the safety and health of all drivers and passengers in Government-owned or -leased motor vehicles and powered industrial equipment (i.e., fork trucks, tractors, platform lift trucks, and other similar specialized equipment powered by an electric motor or an internal combustion engine).	ORAU/ORISE Health and Safety Manual Motor Vehicle Safety Program Powered Industrial Lift Truck (Forklift) Safety Program ORAU/ORISE Policy & Procedure HR-1020, Controlled Substances and Alcohol Use and Testing Commercial Motor Vehicle Drivers

10 CFR 851 Section	General Requirements	ORISE Implementing Documents
App A.9 b	(b) The contractor must tailor the motor vehicle safety program to the individual DOE site or facility, based on an analysis of the needs of that particular site or facility.	<p>ORAU/ORISE Health and Safety Manual Motor Vehicle Safety Program Powered Industrial Lift Truck (Forklift) Safety Program</p> <p>ORAU/ORISE Policy & Procedure HR-1020, Controlled Substances and Alcohol Use and Testing Commercial Motor Vehicle Drivers</p>
App A.9 c	<p>(c) The motor vehicle safety program must address, as applicable to the contractor's operations:</p> <p>(c)(1) Minimum licensing requirements (including appropriate testing and medical qualification) for personnel operating motor vehicles and powered industrial equipment;</p> <p>(c)(2) Requirements for the use of seat belts and provision of other safety devices;</p> <p>(c)(3) Training for specialty vehicle operators;</p> <p>(c)(4) Requirements for motor vehicle maintenance and inspection;</p> <p>(c)(5) Uniform traffic and pedestrian control devices and road signs;</p> <p>(c)(6) On-site speed limits and other traffic rules;</p> <p>(c)(7) Awareness campaigns and incentive programs to encourage safe driving; and</p> <p>(c)(8) Enforcement provisions.</p>	<p>ORAU/ORISE Health and Safety Manual Motor Vehicle Safety Program Powered Industrial Lift Truck (Forklift) Safety Program</p> <p>ORAU/ORISE Policy & Procedure HR-1020, Controlled Substances and Alcohol Use and Testing Commercial Motor Vehicle Drivers</p>
App A Electrical Safety		
App A.10	Contractors must implement a comprehensive electrical safety program appropriate for activities at their site. This program must meet the applicable electrical safety code and standards referenced in 851.23.	<p>ORAU/ORISE Health and Safety Manual Electrical Safety Procedures Facilities Maintenance Procedures</p> <p>FMS Documents FMS-1 - Safe Electrical Work Practices FMS-2 - Lockout / Tagout FMS-5 - New Equipment Identification and Information Requirements</p> <p>ORAU/ORISE Visitor and Subcontractor Safety Handbook</p>
App A Nanotechnology Safety		
App A.11	Reserved	NA
App A Workplace Violence Prevention		
App A.12	Reserved	NA

*** Procedures, Program Descriptions, Management Systems Descriptions, Subject Areas, and other operating procedures listed in the Crosswalk are not incorporated by reference or made a part of this document.**

Appendix B

Applicable Worker Safety and Health Requirements

A number of worker safety and health standards contained in 10 CFR 851, *Worker Safety and Health Program* are applicable to ORISE managed DOE-owned or -leased facilities.

The following health and safety standards contained in 10 CFR 851.23 are applicable to ORAU/ORISE-managed facilities.

- 1) 29 CFR 1904, *Recordkeeping and Reporting Occupational Injuries and Illnesses*
- 2) 29 CFR 1910, *Occupational Safety and Health Standards*,
- 3) 29 CFR 1926, *Safety and Health Regulations for Construction*
- 4) American Conference of Governmental Industrial Hygienists (ACGIH) *Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices* (2005) when TLVs are lower than permissible exposure limits in 29 CFR 1910
- 5) American National Standards Institute (ANSI) Z88.2, *American National Standard for Respiratory Protection* (1992)
- 6) ANSI Z49.1, *Safety in Welding, Cutting and Allied Processes* section 4.3 and E4.3 (1999).
- 7) National Fire Protection Association (NFPA) 70, *National Electrical Code* (2005)
- 8) NFPA 70E, *Standard for Electrical Safety in the Workplace* (2004)
- 9) ANSI Z136.1, *Safe Use of Lasers* (2000)
- 10) ANSI Z49.1, *Safety in Welding, Cutting and Allied Processes* section 4.3 and E4.3 (1999)
- 11) DOE Manual 231.1 – 1A, *Environment, Safety and Health Reporting Manual*, September 9, 2004

Note: The following listing of the generally applicable codes and standards for worker safety and health in the area of fire safety is provided in the Fire Protection Area. It should be noted that the applicability of NFPA codes and standards is determined based on specific facility conditions and operations. Therefore, the list of generally applicable codes and standards does not apply universally across all ORISE facilities.

- 1) NFPA 1, *Uniform Fire Code*
- 2) NFPA 10, *Standard for Portable Fire Extinguishers*
- 3) NFPA 14, *Standpipe and Hose Systems*
- 4) NFPA 30, *Flammable and Combustible Liquids Code*
- 5) NFPA 30B, *Aerosol Products, Manufacture, and Storage*
- 6) NFPA 45, *Fire Protection for Laboratories Using Chemicals*
- 7) NFPA 51B, *Cutting Welding and Other Hot Work*
- 8) NFPA 54, *National Fuel Gas Code*
- 9) NFPA 55, *Compressed Gases and Cryogenic Fluids*
- 10) NFPA 58, *Liquefied Petroleum Gas Code*
- 11) NFPA 70, *National Electrical Code*
- 12) NFPA 70E, *Electrical Safety in the Workplace*
- 13) NFPA 72, *National Fire Alarm Code*
- 14) NFPA 75, *Protection of Information Technology Equipment*
- 15) NFPA 101, *Life Safety Code*

Appendix C

Functional Area Descriptions

C.1 Construction Safety

The purpose of the ORISE construction safety program is to assure that all work is performed safely at all times. It provides a system for identifying and evaluating potential hazards and implementing a process for controlling them consistent with 29 CFR 1926 and related requirements.

Several techniques and communication channels are utilized to identify, report, and document potential facilities related hazards and conditions with the potential to adversely affect ORISE and subcontractor employees. First and foremost, all ORAU employees and subcontractors are encouraged to report potential hazards and potentially unsafe conditions. Individual employee vigilance and impromptu reporting of this type accounts for a large portion of workplace hazard identifications. Other, more methodical techniques of identifying and reporting potential workplace hazards include periodic Site Safety Representative inspections, periodic Facilities Management Services (FMS) engineering and management inspections, scheduled building inspections, maintenance mechanic surveillance and reporting as part of routine preventive and corrective maintenance activities, and frequent customer communications. FMS maintenance mechanics are fully empowered to mitigate identified deficiencies on-the-spot, which is often the case. Instances of identified deficiencies, which cannot be handled immediately, are reported either to the Maintenance Team Leader, Maintenance Service Desk, or to FMS management. ESH subject matter experts also provide construction site inspections and oversight activities. Any identified deficiencies are logged into the maintenance work order system for processing, scheduling, and tracking on a priority basis.

FMS team leaders and managers remain heavily involved in the construction safety management process. The Maintenance Team Leader maintains almost daily contact with all of their employees and many of their customers. During these visits, safe conduct of operations and relevant safety items on a particular job may be discussed. In addition, the team leaders organize and conduct safety planning for non-routine jobs. Notification and planning of upcoming projects, particularly those items regarding safety and communications, are discussed with Building Representatives and other customers requesting maintenance or custodial services. Team leaders also lead their respective Natural Work Teams (NWT) in regular meetings. These meetings have proven to be an effective vehicle for communicating and resolving safety issues and concerns. FMS management reviews all individual work requests to ensure safety planning and permitting requirements have been addressed. FMS management may also lead large project and new service contract pre-bid and project “kickoff” meetings. Project safety requirements are discussed and clarified at these meetings. FMS management also conducts periodic work area walk-throughs, initiates informal project safety discussions, meets with individual employees and departmental customers to discuss various safety related issues, holds weekly team meetings and quarterly departmental safety meetings, and tracks the resolution of safety related findings assigned to FMS

For DOE-funded construction subcontracts the ES&H expectations are formally communicated to construction subcontractors in contract specifications. Facilities Management Service Procedure FMS-7, *Safe Subcontractor Work* is the primary tool for including ES&H requirements in Subcontract Technical Specifications. Specifically, the expectations of a safety and health plan (program) are identified in Master Technical Specifications general requirements.

The ORAU/ORISE Procurement program uses the *Subcontract Safety Clause Matrix* when acquiring construction services with ES&H implications to ensure the appropriate ES&H provisions and clauses are included in the subcontract.

The general contractor is required to submit a job-specific safety plan with associated Job Hazard Analyses in accordance with the FMS ISMS Plan. The plan must be approved by the ORAU Project Manager and the ORAU Environmental, Safety and Health Department prior to the commencement of the field work.

After subcontract award and during performance, serious safety violations or willful repeated violations of safety and health laws, regulations, and requirements may be cause for termination for default under the clause Default, and/or suspension of work under Safety and Health. The subcontractor must ensure that all required training is carried out and documented for Subcontractor employees and all lower-tier subcontractors before personnel start work and that training is continued throughout all phases of construction. The Subcontractor must inform each employee of the known or potential hazards before workers begin the work and their responsibility to work safely and prevent occupational injury. The Subcontractor must ensure that records of all required training are maintained and made available upon request by the Contractor.

The construction superintendent or his competent alternate must be present on the worksite at all times during the performance of project work activities. The construction superintendent shall designate a site safety and health representative to perform frequent inspections of the worksite. The frequency shall be determined on a case-by-case basis considering the size and scope of the contract. Records of inspections shall be available to employees of the subcontractor, ORAU Safety and Health personnel, FTD personnel, and others as needed. In no case shall the requirement for or presence of dedicated Safety and Health personnel relieve the superintendent of full and complete responsibility for compliance with all project Safety and Health requirements. Failure to comply with all project Safety and Health requirements may be sufficient cause for removal of the superintendent from the project.

The subcontractor must ensure that all required training is carried out and documented for Subcontractor employees and all lower-tier subcontractors before personnel start work and that training is continued throughout all phases of construction as required. The Subcontractor must inform each employee of their responsibility to work safely and prevent occupational injury. The Subcontractor shall ensure that records of all required training are maintained and made available upon request by the Contractor.

The on-site Subcontractor construction superintendent is fully responsible for enforcing all safety and health requirements as well as administering disciplinary actions for violations. All observed safety violations will be dealt with and corrected immediately. Personnel responsible for the violation will be instructed on the exact nature of the violation and issued clear warning that safety violations will not be tolerated. Repeated safety violations, willfully or otherwise, by the same individual may result in their suspension or permanent removal from the job site. Individual violations, depending on their severity, may be sufficient cause for employee removal from the job site.

Each Subcontractor must agree to enforce these actions as directed and participate in the *ORAU Performance Based Safety Target Construction Subcontract Clause*, which includes the following:

4. The successful subcontractor must “qualify” to be viable candidate for safe work on an ORAU/ORISE site by meeting a stipulated minimum EMR rating.
5. During the life of the contract, ORAU/ORISE will make payments aggregating up to 90% of the contract amount and hold back amounts on each invoice aggregating to 10% of the face amount of the subcontract.
6. The only condition under which the subcontractor can collect the full 10% retainage at the end of the contract is if the job is completed safely with no recordable and reportable as defined by OSHA accidents. The rate of permanent reduction of payments under the subcontract for each official recorded and OSHA reported accident shall be five percent (5%) of the then current balance of ten percent (10%) retainer.
7. For each officially recorded accident, the subcontractor agrees in advance to a reduction of a portion of the 10% retainage, which computes to 0.5% (one-half of one percent) of the face value of the contract. The subcontractor may experience a reduction in final payment aggregating up to five percent (5%) of the face amount of the subcontract should multiple recordable and OSHA recordable accidents occur under this subcontract. The contract specialist will approve final payment. The contract specialist may, depending on circumstances, choose to utilize his/her sole discretion to mitigate any individual reduction levied by the above formula by further reducing the assessment by up to 50% resulting in an actual reduction equal to 0.25 percent (one-fourth of one percent) of the face amount of the subcontract award.

C.2 Fire Protection

ORAU manages a comprehensive fire protection program with the objective of providing an acceptable level of safety from fire and related hazards for ORISE personnel and for the public. This program is described in the ORAU *Fire Safety Program Document* found in the ORAU *Health & Safety Manual*. Certain procedures are also described in the ORAU/ORISE *Emergency Preparedness Manual*. Together these documents cover facility fire protection, fire alarm notification and egress features, fire department response, fire protection criteria and procedures, apparatus and equipment, and personnel responsibilities.

Fire safety is an integral part of all activities and that facilities have been designed with both active and passive fire protection features such that reliance will not be placed on only one means to ensure an acceptable level of fire safety. This is also characterized by the demonstration of a continuing interest on the part of management and employees in minimizing losses from fire and related hazards and the implementation of preventive features necessary to ensure the satisfaction of objectives related to fire safety. FMS provides or coordinates the work of subcontractors for the design, installation, operability, inspection, maintenance, and testing of fire protection systems. The applicable codes and standards will be those in effect when facility design commences (“code of record”). When significant modifications to a facility occur, the current edition of the code or standard will apply to the modification.

The Oak Ridge Fire Department provides fire prevention and suppression services for all ORAU/ORISE facilities. This includes semi-annual inspections and oversight for plan review and code compliance.

Key components of the ORISE fire protection program are as follows:

- Coordination by FTD with ESH for facilities-related issues.
- Training for employees and management in the recognition of fire hazards.

- Prompt and documented investigation of all reports of potential problems reported.
- Review of past ORAU/ORISE safety and health inspection documents for potential fire hazards ensuring that analyses are conducted for all problem jobs and similar jobs.
- Completion and maintenance of appropriate records.
- Review of proposals, plans, and drawings to identify factors that may contribute to fire safety.
- Use of appropriate outside resources as necessary to insure fire safety program success.

C.3 Explosives Safety

Explosives are not used in ORISE facilities or operations.

C.4 Pressure Safety

Pressure vessel safety is managed by the FMS. All ORISE boilers, pressure vessels, and relief devices are inspected and tested in strict accordance with the Tennessee Boiler and Unfired Pressure Vessel Inspection Law, Rules, and Regulations. These requirements are consistent with the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Safety Code, Section I and Section VIII, and the American National Standards Institute (ANSI)/ASME B.31 *Process Piping Code*. ORAU has no boilers operating at or above 15 psi, which makes all ASME identified codes and standards N/A.

FMS maintains reviews the operation of all boilers and pressure vessels at the Oak Ridge site through the FMS Preventive Maintenance Scheduler Application program to ensure all boilers, pressure vessels, and relief devices are inspected and documented in accordance with the above regulatory requirements. FMS also maintains a copy of all state of Tennessee inspection reports and certifications in its central files.

C.5 Firearms Safety

Firearms are not used in ORISE facilities or in its operations.

C.6 Industrial Hygiene

The ORISE ESH office manages a comprehensive industrial hygiene program to reduce the risk of work-related disease or illness. The industrial hygiene program is described in the ORAU/ORISE *Health and Safety Manual*. It has several key elements, and these are described in procedural documents within the manual and are readily accessible to all employees on line, as follows:

- Hazard Communication
- Chemical Hygiene Plan
- Ergonomics Program
- Respiratory Protection
- Bloodborne Pathogens Exposure Control Plan
- Hearing Protection

- Asbestos Management
- Biohazards
- Personal Protective Equipment
- Non-ionizing Radiation
- Indoor Air Quality

ORAU managers insure that hazards are addressed at all stages of work planning and performance. At the institutional level, all known hazards with a potential to affect ORISE operations have been assessed and analyzed. The results are listed in the ORAU/ORISE Hazards Survey. This comprehensive assessment is used as a building-specific tool for the evaluation, design, and control of potential hazards that could adversely impact workers, the public, or the environment. The document serves a two-fold purpose. It is an inventory of potential sources of occupational exposure and environmental damage. It also serves as a planning guide for emergency preparedness and response actions.

At the program and department level, the primary method used to identify hazards is contained within the work unit ISMS plan. These plans are tailored to the facilities and circumstances of the work that is performed, and each program/department lists its own potential hazards. In areas where hazardous materials are stored or used, inventories are maintained to assure that Material Safety Data Sheet (MSDS) collections are complete, current, and readily accessible to all employees. Postings are required for all areas where radiological substances and hazardous materials are stored or used. Additionally, ESH subject matter experts must approve the purchase of all chemical and radiological materials.

Quarterly management inspections are conducted to evaluate all workspaces and processes. These work unit inspections are augmented with surveys, monitoring, and assessments by members of the ESH and FTD programs where appropriate.

At the activity level, workers use Job Hazard Analyses (JHAs) extensively. Copies of JHAs are available to all employees electronically, and hard copies are maintained, where applicable. The OSHA-recommended format for JHAs is used, listing "Activity/Hazard/Control" for each step in potentially hazardous operations. Employee input is solicited in the development and review of JHAs. Training to cover the content of JHAs is provided to appropriate employees.

When new work is planned or when the work that is presently being performed is modified, managers are required to complete and submit an ISMS Pre-Job Hazard Checklist form. This must be completed prior to the initiation of any work that is not addressed in the program/department ISMS Plan. The function of the ISMS Pre-Job Hazard Checklist form is to serve as a hazards inventory only and not as a plan or a work process control document. If a plan is required due to the potential hazards involved, the ISMS Plan for New or Modified Work or a formal Health and Safety Plan is also required.

C.7 Biological Safety

Biological and etiological agents are not in use in ORISE facilities or in its operations.

C.8 Occupational Medicine

ORISE provides a comprehensive program to protect and enhance the physical and mental health of its employees, to ensure fitness for work, and to promote good public health practices. The program establishes responsibilities and procedures for the Occupational Medical Program (OMP) are addressed in *ORAU Policy and Procedure GP-1100, Occupational Medicine*.

The objectives of the OMP are summarized as follows:

- 1) To assist management in protecting employees from health hazards in the work environments.
- 2) To assist management in assuring the placement of employees in work that can be performed in a reliable and safe manner consistent with the requirements of the Americans with Disabilities Act of 1990.
- 3) To provide support to management in the medical, mental, and substance abuse aspects of personnel reliability and fitness for duty.
- 4) To assist in the early detection, treatment, and rehabilitation of employees who are ill, injured, or otherwise impaired.
- 5) To practice preventive medicine and to provide health education and health promotion programs in order to facilitate optimal employee health.
- 6) To provide professional guidance and consultation to management on all health-related issues.
- 7) To provide employees, as appropriate, with professional medical evaluation, guidance, counseling, and referrals in support of optimal physical and mental health.
- 8) To protect the privacy of employees and the confidentiality of their medical records in accordance with applicable laws and regulations.
- 9) To reduce morbidity and mortality by providing support to management and DOE through the collection and analysis, when requested, of employee health data for the purpose of early detection and prevention of occupational and non-occupational illnesses and injuries.

C.9 Motor Vehicle Safety

The purpose of the ORAU/ORISE motor vehicle safety program is to ensure the safe operation of corporate owned and government owned or leased motor vehicles in order to protect the safety of the drivers, passengers, the public, and to minimize physical damages to our vehicle fleet.

The operation of government or corporate owned vehicles is restricted to those authorized employees who require the use of such vehicles for official business and who possess a valid state driver's license for the category of vehicle being operated. All ORAU/ORISE vehicle management operations must be conducted in accordance with all applicable policies, procedures, regulations and/or laws contained in *ORAU Policy and Procedure FM-300, Vehicle Management Policy*. Also, all vehicle operations must be operated in accordance with the *ORAU Vehicle Management Implementation Procedures* issued through the ORAU Facilities and Transportation Department / Records, Property, and Relocation Section.

General requirements for employees in the operation of motor vehicles are as follows:

- 1) Inspect vehicle for safe operating condition (brake operation, obvious tire defects, clear visibility, and fuel level) prior to each use.
- 2) Wear a seat belt and ensure that each passenger wears a seat belt.
- 3) Observe all federal, state, and local laws and regulations and posted speed limits.
- 4) Report promptly any vehicle damage or theft to ESH.

- 5) Complete a Report of Motor Vehicle Accident form (available in the vehicle glove compartment) in the event of an accident and submit it to ESH.
- 6) Report any malfunctions of the vehicle to FTD.
- 7) Lock the vehicle when unattended.
- 8) Completely fill out log sheet for each use.
- 9) Report promptly any personal moving traffic violations over \$250.00, or other violations involving the use of a personal vehicle to the ESH office.
- 10) Report any change in license status (e.g., if your license has been suspended or revoked) to the ESH office.
- 11) Pay all driver related traffic violations and citations.

C.10 Electrical Safety

The ORISE electrical safety program provides a framework for identifying and controlling potential electrical hazards that are present in the workplace. The applicable OSHA, NFPA, and other related design and testing standards provide the underlying foundation for those electrical program elements. ORISE Procedure FMS-1, *Safe Electrical Work Processes*, establishes general guidelines and requirements for conducting work on electrical systems. The electrical safety program applies to activities in maintenance, laboratories, and office environments involving potential exposure to operational electrical hazards.

Its purpose is summarized as follows:

- 1) Ensure that electrical maintenance work and electrical construction work are performed in such a manner so as to prevent electrical shock resulting from direct or indirect contact with energized electrical equipment.
- 2) Establish guidelines for assessing training needs and ensuring provisions are available for conducting electrical training.
- 3) Ensure that only trained and qualified individuals conduct electrical maintenance work and that only qualified employees or employees under the immediate direction of qualified employees conduct electrical installation work.
- 4) Ensure electrical engineering design work is conducted and certified by qualified licensed electrical engineers.
- 5) Establish standards for identifying electrical panels, circuits, outlet covers, switches, and other electrical equipment.
- 6) The electrical safety program applies to activities in maintenance, laboratories, and office environments involving potential exposure to operational electrical hazards.

C.11 Other Functional Areas Needed to Address Workplace Hazards

No other functional areas are needed to address workplace hazards.

C.12 Chronic Beryllium Disease Prevention Program (CBDPP)

ORISE is not required to have a CBDPP.

Appendix D

ORISE 10 CFR 851 FACILITIES

*Note: Current occupant numbers are as of February, 2007. Current numbers can be obtained from the ORAU Human Resources Department.

SITE/LOCATION	FACILITIES	USE	OCCUPANTS
A. South Campus 1299 Bethel Valley Road DOE owned	SC-1 & Annex Main facility	Offices, laboratories, and conference rooms	37
	SC-10 Building ESSAP Laboratory and Beryllium Laboratory	Laboratories and offices	10
	SC-100 Building FTD Offices	FTD offices, and conference room	25
	SC-200 Building Warehouse	Warehouse, general & records storage, mailroom and shop	6
	SC-9 Building Storage	Chemical and low level radiation waste storage	0
	SC-13 Building (Old Equine Building)	ESSAP archives sample storage	0
	SC-15 Building (Old Calf Metabolism Barn)	General equipment storage	0
	SC-16 Generator Building		0
B. REAC/TS East Vance Rd. Oak Ridge MMCOR owned DOE MOA	Methodist Medical Center of Oak Ridge	Offices, training rooms, and radiation emergency response treatment facilities	13

C. Atmospheric Turbulence and Diffusion Laboratory facility 456 South Illinois Avenue Oak Ridge NOAA operated, DOE owned, ORISE assistance	ATDL Main Building	Offices, shop, and conference rooms	13
	Office Building K-1005E	Offices	5
	Applied Fluid Dynamics Laboratory	Wind tunnel, shop, and offices	2
	Storage Building and Electronics Shop	Storage and shop	2
D. Laboratory Road facility 246 Laboratory Rd. Oak Ridge DOE owned	Building 2715 Environmental Building (Building 2714 recently vacated)	Empty laboratories, classrooms and storage	0

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Appendix E ORISE Acronyms and Abbreviations

AHJ	Authority Having Jurisdiction
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
ATDL	Atmospheric Turbulence and Diffusion Laboratory
CHP	Certified Health Physicist
CAIRS	DOE Computerized Accident and Incident Reporting System
CIH	Certified Industrial Hygienist
COHN-S	Certified Occupational Health Nurse Specialist
CSP	Certified Safety Specialist
EMR	Experience Modification Rate
ESH	ORAU/ORISE Environment, Safety & Health Office
ES&H	Environment, safety and health
FTD	ORAU/ORISE Facilities and Transportation Department
FMS	ORAU/ORISE Facilities Management Service
ISM	Integrated Safety Management
ISMS	Integrated Safety Management System
ISO	International Organization for Standardization
JHA	Job Hazard Analysis
MSDS	Material Safety Data Sheet
NFPA	National Fire Protection Association
NOAA	National Oceanic and Atmospheric Administration
NWT	Natural work team

OMP	ORISE Occupational Medicine Program
ORAU	Oak Ridge Associated Universities
ORISE	Oak Ridge Institute for Science and Education
OSHA	Occupational Safety and Health Administration
PE	Professional Engineer
RA	Registered Architect
REAC/TS	Radiation Emergency Assistance Center/Training Site
Safety 1 st	ORAU/ORISE Safety 1 st website
VPP	Voluntary Protection Program
WSS	Work Smart Standards