U.S. DEPARTMENT OF ENERGY
OFFICE OF INSPECTOR GENERAL

AUDIT OF ENVIRONMENTAL TRAINING AT THE BONNEVILLE POWER ADMINISTRATION, PORTLAND, OREGON

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SUMMARY

The Bonneville Power Administration (BPA) was subject to environmental training and recordkeeping regulations designed to help employees minimize their risk of exposure to hazardous materials and chemicals. The purpose of this audit was to evaluate whether BPA had designed and implemented environmental training programs that complied with the requirements of environmental regulations.

Our audit disclosed that BPA had not complied with all Occupational Safety and Health Administration (OSHA), Department of Energy (Department), and BPA requirements for environmental training and recordkeeping. A significant number of BPA employees had not received training required by OSHA regulations 29 CFR 1910.120 (OSHA Emergency Response Regulation) and 29 CFR 1910.1200 (OSHA Hazard Communication Regulation) because BPA had not yet: determined types of emergency response and hazard communication training needed; identified all employees requiring such training; and provided such training to all employees identified. Also, BPA did not maintain complete and accurate records of employee environmental training as required because BPA (1) allowed its offices to record environmental training in systems that did not feed into its Automated Training System (ATS) database; and (2) based the accuracy of its ATS records on course enrollment instead of verification of course completion.

BPA management concurred with the findings and agreed to take corrective actions recommended in the report.

Office of Inspector General

PART I

APPROACH AND OVERVIEW

PURPOSE AND OBJECTIVES

BPA is a distinct Department entity that is the major wholesaler of electricity in the Pacific Northwest. BPA operates and maintains an extensive regional power transmission system covering Oregon, Washington, Idaho, and portions of several adjoining states. This system contains the Ross Complex and hundreds of local electrical substations with environmental hazards to which BPA employees at those sites may be exposed. BPA employees needed environmental training to deal with those hazards.

This audit was similar to an earlier Departmentwide Office of Inspector General "Report on Environmental Training at the Department of Energy" (DOE/IG-0294), which was issued in December 1990. That audit did not address Power Marketing Administrations such as BPA. The objective of this audit was to determine whether BPA had designed and implemented environmental training programs that complied with environmental regulations.

SCOPE AND METHODOLOGY

We reviewed BPA's environmental training and records for 1,316 of BPA's approximately 3,400 full-time employees who were likely to come into contact with hazardous materials. The 1,316 included: 1,305 employees at BPA's Ross Complex in Vancouver, Washington and in three of BPA's four Area Offices--Lower Columbia, Upper Columbia, and Snake River; and 11 employees at BPA's Treatment, Storage, and Disposal (TSD) facility.

During our examination, from December 1990 to August 1991, we interviewed officials from BPA's Training Office, Safety Office, and Environmental Protection Branch. We also interviewed BPA management or supervisory officials responsible for the employees at the Ross Complex and the three Area Offices.

We did not interview officials or review training records of employees assigned to BPA headquarters at Portland, Oregon. We felt that headquarters employees were less likely to work around environmental hazards or to respond to environmental emergencies than the Ross Complex and Area Office employees.

The audit was made in accordance with generally accepted Government auditing standards for performance audits which included tests of internal controls and compliance with laws and regulations to the extent necessary to satisfy the objective of the audit.

We assessed the significant internal controls with respect to BPA environmental training and recordkeeping. Our assessment consisted of reviewing BPA's procedures designed to assure compliance with environmental training and recordkeeping requirements. However, because our review was limited, it would not necessarily have disclosed all internal control deficiencies that may exist.

We discussed our findings with the Assistant Administrator for the Office of Operations, Maintenance, and Construction, and members of his staff during an exit conference on December 17, 1991.

BACKGROUND

BPA's environmental hazards are those common to an electric utility environment. According to BPA, these include RCRA-designated hazardous wastes, oil-filled equipment (some of it containing Polychlorinated Biphenyls-PCBs), herbicides, hazardous chemicals, and hazardous gasses. The majority of BPA's RCRA hazardous wastes stem from the use of industrial solvents such as 1,1,1-Trichloroethane (Trichlor), used to degrease electrical equipment. Trichlor is a hazardous substance which may migrate through soil into groundwater. Partly in response to a FY 1990 Office of Inspector General audit, BPA has initiated steps to reduce procurement and use of Trichlor. Some BPA electrical equipment also contains oil or insulating fluid with high levels of PCBs. PCBs have potential adverse long-term human health and environmental effects. BPA uses herbicides to control vegetation in substations or around transmission line right-of-way areas. Herbicides must be used properly, because they can damage the environment if they reach surface water or groundwater. BPA uses a number of hazardous chemicals such as Trichlor, mercury, kerosene, and diesel. Specialized electrical equipment may also contain chemical compounds, fluids, or gasses that are hazardous if one is exposed to the substance or one of its by-products.

OBSERVATIONS AND CONCLUSIONS

We found that BPA had made significant progress in its attempts to achieve compliance with environmental monitoring and reporting requirements, and in identifying the extent of potential environmental contamination. Since 1990, BPA has

issued an environmental Action Plan and a report on use of alternatives to Trichlor. BPA has also published a Waste Minimization Plan and a 10-year Environmental Strategy. In FY 1991, BPA began addressing Department requirements for a comprehensive water management plan and for environmental occurrence reporting. BPA also began efforts to bring its existing Environmental Appraisal Program into compliance with Department requirements for environmental appraisals.

Despite these positive steps, the audit showed that BPA had not taken sufficient actions to provide OSHA training to all employees requiring it. Therefore, we recommended that BPA complete and implement a comprehensive environmental training plan containing procedures to ensure that BPA will provide OSHA training to all employees who require it.

The audit also showed that BPA had not complied with requirements to completely and accurately record all environmental training. Therefore, we recommended that BPA institute procedures to bring BPA environmental training recordkeeping into compliance with requirements.

These findings which relate to environmental training and recordkeeping disclosed material internal control weaknesses which management should consider when preparing its yearend assurance memorandum on internal control.

PART II

FINDINGS AND RECOMMENDATIONS

1. Required OSHA Environmental Training

FINDING

OSHA regulations required BPA to train its employees to (1) respond to emergency releases of hazardous substances (OSHA Emergency Response Regulation) and (2) protect themselves from exposure to site hazardous chemicals (OSHA Hazard Communication Regulation). More than 1,000 of BPA's approximately 3,400 full-time employees needed training in one or both of these areas. The review showed that BPA had not provided emergency response training to 55 percent of these employees nor site-specific hazard communication information and training to any of them. This occurred because BPA had not determined the types of emergency response and site-specific hazard communication training needed, identified all employees who required those types of training, and provided such training to all employees identified. As a result, there was increased risk of contamination of BPA employees and the environment.

RECOMMENDATIONS

We recommend that the BPA Administrator direct the Environmental Protection Branch to complete a comprehensive environmental training plan that:

(1) Is mandatory for all BPA offices;

(2) Contains procedures to determine types of emergency response and hazard communication training needed and to identify all employees requiring such training; and

(3) Contains procedures to provide such training to all employees identified.

MANAGEMENT REACTION

BPA Management concurred with the finding and agreed to implement the recommendations.

DETAILS OF FINDING

We reviewed BPA's compliance with training requirements of the OSHA Emergency Response Regulation and the OSHA Hazard Communication Regulation. The OSHA Emergency Response Regulation covers workers who may respond to emergencies involving hazardous materials (e.g. spills). It requires training of employees to make them aware of the potential hazards they may encounter and provide them with the necessary knowledge and skills to perform their work with minimal risk to safety and health. The OSHA Hazard Communication Regulation requires the employer to provide information and training about hazardous chemicals in the workplace to which their employees may be exposed. Employees need to know the hazards and identities of the chemicals at their specific workplace. Further, employees need to know what protective measures are available to them.

OSHA Emergency Response Training

The OSHA Emergency Response Regulation contains requirements for initial training. Affected employees require training at one of six levels, based upon their emergency response duties. Each level consists of a minimum number of training hours and/or knowledge of specific emergency response competencies (see Appendix A for a detailed list of competencies). The training levels increase in complexity from 1st Responder Awareness to those of Hazardous Materials Specialist, On Scene Incident Commander, and Post-Emergency Response Operations.

We reviewed the duties and responsibilities of 1,316 BPA employees and found 1,043 whose duties required them to receive one of the six levels of emergency response initial training. The following table shows the BPA employees we reviewed who had not received their required level of emergency response initial training.

OSHA EMERGENCY RESPONSE INITIAL TRAINING					
Level	Duties	Minimum Training Hours Required	Number of Employees Needing Training	Number of Employees Not Trained	Percent Not Trained
1st Responder Awareness	Recognize & report emergency release	Not Specified	555	303	55
1st Responder Operations	Contain release from a distance	8 or competencies	173	143	83
Hazardous Materials Technician	Actively seek to stop release	24	214	95	44
Hazardous Materials Specialist	Advise on handling released substance	24	16	0	0
On Scene Incident Commander	Assume site control during emergency	24	41	23	56
Post-Emergency Response Operations	Remove contamination after the emergency	40 or Respirator and Hazard Communication	44	12	27
Totals			1,043	576	

Overall, 576 of the 1,043 employees had not received their required level of training. Information within the table indicates that many BPA employees had not received training enabling them to respond to an emergency release of hazardous materials.

OSHA Hazard Communication

The OSHA Hazard Communication Regulation requires employers to provide employees with site-specific information and training about hazardous chemicals to which employees may be exposed under normal conditions of use or in a foreseeable emergency.

OSHA requires the information and training to be provided in a written Hazard Communication Program. The Hazard Communication Program must be adapted to address the specific chemical hazards at each facility it covers. A facility's written Hazard Communication Program is required to:

--contain a list of hazardous chemicals present at the workplace;

--indicate who is to be responsible for the various aspects of the program at the facility and indicate where written materials will be made available to employees;

--describe how the requirements for labels and other forms of warning, and material safety data sheets will be met at the facility; and

--describe how employee information and training requirements will be met at the facility. This includes a procedure to train new employees at the time of their initial assignment to work with a hazardous chemical, and to train employees when a new hazard is introduced into the workplace.

From the same group of 1,316 BPA employees we reviewed, we found that 1,064 of these employees had duties requiring them to receive site-specific hazard communication information and training. None of the 1,064 employees we identified as requiring site-specific hazard communication information and training had received it. BPA had a written Hazard Communication Program, but it did not contain required site-specific information and procedures for training as outlined above.

The BPA Safety Office had provided a short hazard communication training session several times since 1984, but the course covered only general information on typical workplace chemical hazards. It did not satisfy the OSHA Hazard Communication Regulation's requirement for site-specific information and training. Only 43 of the 1,064 employees had received even this general training.

Reason for Lack of OSHA Training

BPA employees had not received required emergency response and hazard communication training because BPA had not determined the types of training needed, identified all employees who required those types of training, and provided such training to all employees identified.

In response to a November 1990 DOE Headquarters environmental audit of the Lower Columbia Area, BPA committed itself to providing environmental training to meet regulatory requirements. During FY 1991, BPA began to offer emergency response courses and continued to offer a general hazard communication training course. However, BPA had not yet (1) determined types of employee training needed for each of the emergency response training levels and for site-specific hazard communication; and (2) identified all employees requiring those types of training. Because BPA had not yet taken these actions, it could not provide emergency response and hazard communication training to all employees who required it.

As BPA began to offer its FY 1991 training courses, BPA offices experienced difficulties in deciding which of their employees required which types of environmental training. As a result, some Area and Division officials submitted written requests to the Environmental Protection Branch for guidance in making those decisions. In response to these requests, the Environmental Protection Branch decided in the spring of 1991 to draft a comprehensive environmental training plan, including identifying types of training needed and employees requiring

such training. At the end of our audit the Environmental Protection Branch started to draft this plan.

It was a positive step for the Environmental Protection Branch to begin drafting such a plan. However, BPA will not be in full compliance unless the completed plan is mandatory for all BPA offices, and contains procedures to: determine types of emergency response and hazard communication training needed; identify all BPA employees requiring those types of training; and provide such training to all employees identified.

Results of Lack of Training

The lack of required emergency response and site-specific hazard communication training may adversely affect BPA employees and the environment. BPA employees may not know how to protect themselves in situations involving emergency releases of hazardous substances or exposure to hazardous chemicals. Further, such actions could also result in damage to the environment, higher cleanup costs, and regulatory non-compliance with emergency reporting requirements due to delayed employee recognition and/or reporting of such incidents.

2. Environmental Training Records

FINDING

Department and BPA regulations required the maintenance of complete and accurate records of employee training, including training in environmental hazards. Our audit found that BPA had not completely and accurately recorded all environmental training taken by employees. This occurred because BPA (1) allowed its offices to record environmental training in systems that did not feed directly into the BPA Automated Training System (ATS); and (2) based the accuracy of its ATS records on course enrollment instead of verification of course completion. The lack of complete and accurate BPA training records could result in the following adverse situations: BPA managers would not be able to accurately assess the environmental training needs of their employees; BPA employees may not receive required environmental training or may experience delays in receiving the training; and the Department will have incomplete and incorrect automated training records.

RECOMMENDATIONS

We recommend that the BPA Administrator:

(1) Require all BPA offices to record all environmental training in the ATS database or in systems that feed directly into the ATS database; and

(2) Direct the Training Office to devise procedures for BPA offices to ensure the accuracy of employee ATS records based on verification of course completion.

MANAGEMENT REACTION

BPA Management concurred with the finding and agreed to implement the recommendations.

DETAILS OF FINDING

We examined BPA training records for compliance with Department Order 3410.1B and the BPA Training Handbook. The Order requires that Departmental units maintain complete and accurate training records on the computerized Departmental Training Information System (DTIS). It specifies that training officers or their representatives are responsible for accurate and complete data entries, training status updates, and the review of produced records to ensure their validity. It also specifies that after completion of training, verification of

course completion must be entered into the DTIS. The Handbook requires that all BPA employee training be entered into BPA's computerized ATS. The Department has agreed to accept the ATS data as BPA's input into the DTIS.

Recordkeeping Non-compliance

BPA did not record all environmental training in the ATS. We compared BPA Safety Office automated training records from two BPA Safety Office environmental training courses with the ATS records of the course attendees. Only about 30 percent of 270 attendees whose training was recorded in the Safety Office automated training records also received credit in the ATS. We also found three instances in which BPA Division or Area Offices had offered their own internal environmental training courses. One of the three courses was attended by over 80 employees. None of this training was recorded in the ATS. In spite of the requirement to enter all training into the ATS, a significant amount was not being entered. Thus, the ATS did not contain a complete record of all environmental training taken by BPA employees.

In addition, the environmental training information BPA did record in the ATS did not always accurately reflect whether an employee had completed a training course. To determine which employees completed environmental training courses, we compared ATS-generated course enrollment rosters with the final course attendance sheets for 10 FY 1991 environmental training courses representing approximately 180 BPA employees. We found an error in the ATS records of 20 of those employees. Eleven employees completed a course, but there was no record of the course in the ATS. Nine employees did not complete a course, but their ATS records listed the course.

Reason for Non-Compliance

BPA had not completely and accurately recorded employee environmental training for two reasons. The first reason was that BPA allowed its offices to enter environmental training into systems that did not feed directly into the ATS: the separate Safety Training Automated Reporting System (STARS) database, and manual recordkeeping systems. The BPA Safety Office maintained the STARS database to record Safety Office training designed to meet OSHA safety, health, and environmental training requirements. In addition, some BPA offices offered their own internal environmental training courses which were not recorded in the ATS. Managers either kept manual records or no records at all of employees who received this training.

The second reason was that BPA based the accuracy of its ATS records on course enrollment instead of verification that the employee completed the training course. Administrative personnel in BPA

offices were directed to enter their employees into the ATS to enroll them in a BPA-sponsored course. However, verification of course completion was also necessary to ensure that employee training was accurately recorded in the ATS. The errors we found in ATS training records of employees showed that BPA offices did not always perform such verification, and were therefore vulnerable to creating ATS record errors. For example, BPA field supervisors often sent their employees to or withdrew them from training courses on short notice. They did this in order to accommodate sudden changes in employee work schedules (e.g. being called away to do emergency repair work, or being released from a previous work commitment). If the BPA office administrative personnel did not enter the enrollment into the ATS for an employee added to the course, or did not delete from the ATS the enrollment for an employee withdrawn from the course, that employee's ATS record would be in error.

Results of Non-Compliance

This lack of complete and accurate BPA environmental training records could result in three adverse situations. The first situation would be that BPA managers would not be able to accurately assess the environmental training needs of their employees. They would not be able to determine whether all employees were properly trained to respond to emergency releases of hazardous materials or to be in the proximity of hazardous chemicals in the workplace. They would also have difficulty making informed decisions about the future environmental training needs of their employees.

The second situation would be that BPA employees may not receive required environmental training or may experience delays in receiving the training. For example, an employee who had been wrongly credited in the ATS for environmental training courses not completed may not receive required training at all. Alternatively, he or she may receive it later only if someone discovered the ATS training record error and notified the employee and/or the supervisor.

The third situation would be that the Department will have incomplete and incorrect automated training records. BPA's ATS training records feed into the Department's DTIS training records. BPA submission of incomplete and inaccurate ATS data creates incomplete and incorrect DTIS training records.

PART III

MANAGEMENT AND AUDITOR COMMENTS

In responding to our tentative findings and recommendations, the Assistant Administrator for the BPA Office of Operations, Maintenance, and Construction stated that BPA is in general agreement with our findings and recommendations. A summary of management's comments and our replies follows.

1. Required Environmental Training

Management comments

Management concurred with the recommendation that a comprehensive training plan is needed for OSHA mandated environmental training. Management stated that it would issue such a plan before the end of 1991. The plan is to identify mandatory training for all BPA workers who may encounter hazardous chemicals or substances. It will identify employees needing training by specific job category and set out the means through which such training will be provided.

BPA is developing a methodology to determine how many employees need what level of training. Until it is completed, BPA reserves the right to disagree with the specific numbers of employees needing training.

Auditor comments

BPA management's intended actions will be responsive to the finding and recommendations.

2. Environmental Training Records

Management comments

Management concurred with the recommendation that all BPA offices record all OSHA required environmental training in a uniform database. Management informed us that BPA is currently updating and revising recordkeeping procedures for OSHA hazardous materials training. The BPA Training Office will update and issue procedures to ensure the accuracy of such records.

Auditor comments

BPA management's intended actions will be responsive to the finding and recommendations.

PART IV
APPENDIX

Emergency Response Competencies

The following OSHA Emergency Response competencies were required for the six levels of designated emergency responders at locations other than a TSD site:

1. First Responder Awareness Level

--An understanding of what hazardous materials are, and the risks associated with them in an incident;

--An understanding of the potential outcomes associated with an emergency created when hazardous materials are present;

--The ability to recognize the presence of hazardous materials in an emergency;

--The ability to identify the hazardous materials, if possible;

--An understanding of the role of the first responder awareness individual in the employer's emergency response plan including site security and control and the U.S. Department of Transportation Emergency Response Guidebook; and

--The ability to realize the need for additional resources, and to make appropriate notifications to the communication center.

2. First Responder Operations Level

--Knowledge of the basic hazard and risk assessment techniques;

--Know how to select and use proper personal protective equipment provided to this level;

--An understanding of basic hazardous material terms;

--Know how to perform basic control, containment, and/or confinement operations within the capabilities of the resources and personal protective equipment available;

--Know how to implement basic decontamination procedures; and

--An understanding of the relevant standard operating and termination procedures.

3. Hazardous Materials Technician

--Know how to implement the employer's emergency response plan;

--Know the classification, identification, and verification of known and unknown materials by using field survey instruments and equipment;

--Be able to function within an assigned role in the Incident Command System;

--Know how to select and use proper specialized chemical personal protective equipment provided to the hazardous materials technician;

--Understand hazard and risk assessment techniques; termination procedures; basic chemical and toxicological terminology and behavior; and understand and implement decontamination procedures; and

--Be able to perform advance control, containment, and/or confinement operations within the capabilities of the resources and personal protective equipment available.

4. Hazardous Materials Specialist

--Know how to implement the local emergency response plan;

--Understand classification, identification, and verification of known and unknown materials by using advanced survey instruments and equipment;

--Be able to select and use proper specialized chemical personal protective equipment provided to them;

--Understand in-depth hazard and risk techniques;

--Be able to perform specialized control, containment, and/or confinement operations within the capabilities of the resources and personal protective equipment available;

--Be able to determine and implement decontamination procedures;

--Have the ability to develop a site safety and control plan; and

--Understand chemical, radiological, and toxicological terminology and behavior.

5. On-scene Incident Commander

--Know and be able to implement the employer's incident command system;

--Know how to implement the employer's emergency response plan;

--Know and understand the hazards and risks associated with employees working in chemical protective clothing;

--Know how to implement the local emergency response plan;

--Know of the state emergency response plan and of the Federal Regional Response Team; and

--Know and understand the importance of decontamination procedures.

6. Post-emergency response operations

Either:

--Know the same competencies applicable to general site workers at uncontrolled hazardous waste cleanup sites (including 40 hours of initial training), or

--Know any other appropriate safety and health training made necessary by the tasks expected to be performed such as personal protective equipment and decontamination procedures (if an on-site employee required to have respiratory protection and Hazard Communication training).