

U.S. Department of Energy
~~OFFICE OF RIVER PROTECTION~~
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Richland, Washington 99352

05-ESQ-088

DEC 29 2005

Mr. J. P. Henschel, Project Director
Bechtel National, Inc.
2435 Stevens Center
Richland, Washington 99352

Dear Mr. Henschel:


CONTRACT NO. DE-AC27-01RV14136 – ASSESSMENT REPORT A-05-ESQ-RPPWTP-010
– RADIOLOGICAL CONTROL PROGRAM (RCP), OCTOBER 17 THROUGH 25, 2005

This letter forwards the results of the U.S. Department of Energy, Office of River Protection, assessment of the Bechtel National, Inc. (BNI) RCP conducted from October 17 through 25, 2005. The assessment team (Team) evaluated the effectiveness of the RCP with focus on contractor oversight of the Radiation Generating Device subcontractors and adequacy of legacy contamination surveys at the Waste Treatment and Immobilization Plant Site.

The Team concluded BNI's RCP oversight was effective and surveys for contamination were adequate. The Team noted recent RCP improvements as a strength and made five Observations. The Team identified a noncompliance with 10 CFR 835.601(a) for posting and issued a Finding (A-05-ESQ-RPPWTP-010-F01). BNI took appropriate corrective actions; therefore, no responses to the Finding or the Observations are required.

If you have any questions, please contact me, or your staff may call Robert C. Barr, Director, Office of Environmental Safety and Quality, (509) 376-7851.

Sincerely,


Roy L. Schepens, Manager
Office of River Protection

ESQ:JLP

Attachment

cc w/attach:
M. F. Perks, BNI
G. A. Simiele, BNI

U.S. DEPARTMENT OF ENERGY
Office of River Protection
Environmental Safety and Quality

ASSESSMENT: Radiological Control Program

REPORT: A-05-ESQ-RPPWTP-010

FACILITY: Bechtel National, Inc. Waste Treatment and Immobilization Plant

LOCATION: Hanford Site

DATES: October 17 through 25, 2005

ASSESSORS: Jeanie L. Polehn, Lead Assessor
Larry R. McKay, Assessor

APPROVED BY: Patrick P. Carrier, Team Lead
Verification and Confirmation

Executive Summary

The U.S. Department of Energy, Office of River Protection conducted an assessment of the Bechtel National, Inc. Radiological Control Program (RCP) October 17 through October 25, 2005. The assessment evaluated: 1) effectiveness of the Contractor's RCP oversight of subcontractors using Radiation Generating Devices (RGD) such as radiography, soil densitometry, and positive material identification sources; and 2) the adequacy of Hanford legacy contamination surveys on the Waste Treatment and Immobilization Plant Site.

The Team concluded the Contractor conducted adequate surveys for legacy contamination and performed effective oversight of the RGD program, with the exception of posting where improvement was needed. The radiography subcontractor had a trailer containing radiography sources; the trailer was posted "Radioactive Material" but the colors on the postings had faded and no longer met the cited regulatory requirements. The Team also observed a gray bucket posted "Caution High Radiation Area;" the bucket did not contain a radiation source so the sign was inappropriate. The Team documented these as a noncompliance with 10 CFR 835 Finding (A-05-ESQ-RPPWTP-010-F01). The Contractor immediately corrected the postings; therefore no response to the Finding is required.

In addition, the Team identified six Observations; one classified as a strength and five as areas for improvement. The strength involved a number of recent improvements to the RCP. The improvement areas included: self-assessment, routine oversight of RGDs, documentation, and survey instruments. Responses to the observations are not required.

The attached report documents the assessment details.

Table of Contents

Executive Summary	ii
Table of Contents	iii
List of Acronyms	iv
1.0 Details	5
2.0 Conclusions.....	7
3.0 Items Opened, Closed, and Discussed	8
4.0 Signatures.....	8

List of Acronyms

HPT	Health Physics Technician
PMI	Positive material identification
RadCon	Radiological Control
RCP	Radiological Control Program
RGD	Radiation Generating Device
RSR	Radiological Survey Reports
TD	Task Description
WTP	Waste Treatment and Immobilization Plant

1.0 Details

The Team reviewed selected Waste Treatment and Immobilization Plant (WTP) Contractor's documents, interviewed personnel, and observed WTP Radiological Control (RadCon) activities to determine the effectiveness of the Contractor's RadCon Program oversight of its radiography, soil densitometry, and Positive Material Identification (PMI) subcontractors. The Team also evaluated the adequacy of the Contractor's Hanford legacy contamination surveys at the WTP Site.

1.1 RadCon Program Activities

For evaluation of the Contractor's RadCon Program oversight, the Team focused on the following elements of the RadCon Program: posting, program improvements, self-assessments, Radiation Generating Device (RGD) oversight, documentation, and survey instruments.

Postings

A-05-ESQ-RPPWTP-010 – A Radioactive Material Area and a High Radiation Area were posted inappropriately. The radiography subcontractor did not properly post its trailer containing radiography sources. The trailer was posted "Radioactive Material," however the signs had faded so the background was no longer yellow and the trefoil no longer magenta (the background was white and the trefoil pink). In addition, radiography subcontractor personnel used a gray bucket posted "Caution High Radiation Area" to transport radiation-posting signs; the bucket did not contain a radiation source. The sign attached to the bucket was inappropriate because there was no High Radiation Area. The Contractor agreed with the Finding and corrected the postings. The Finding is closed.

Improvements to the RadCon Program (Program Strength)

The Contractor implemented the following RadCon Program improvements:

- Assigned a highly qualified individual with engineering experience to the Acting Radiological Operations Lead (AROL) position;
- Participated in monthly Hanford RadCon Forum meetings;
- Developed and utilized a dynamic RadCon staffing program to support changing resource needs; and
- Developed and utilized ergonomic devices to prevent Health Physics Technician (HPT) repetitive motion injuries from use of survey instruments during legacy contamination surveys.

Personnel with no RadCon Expertise Performed RadCon Program Audits (Improvement Area)

The Contractor's Quality Assurance group performed an audit of RadCon program procedure compliance; however, the auditors had no RadCon expertise (e.g., were not certified health physicists, did not have degrees in radiological protection, or had no radiation protection experience). The auditors identified seven minor issues; issues of a more substantive nature such as identification of lack of routine oversight of some elements of the Contractor's RGD program may have been identified if the auditors had RadCon expertise.

Weaknesses in Radiation Generating Device Routine Oversight (Improvement Area)

The Team identified the following minor program improvements needed through document reviews, interviews, and field Observations.

The Team found Task Description (TD) records, and the associated procedure, provided inadequate evidence of routine oversight of subcontractor soil densitometers and PMI devices. The Contractor performed initial oversight but not routine follow-up required to assure safe use of such sources.

The Team determined some aspects of radiography oversight were not performed and the TD and procedure provided limited directions. Oversight of posting, dose rate readings, and records was performed but other RadCon safety barriers important to worker safety were not evaluated (e.g., sources attended, appropriate dosimetry properly worn, instruments calibrated, adequate training).

The Team noted there was no documented evidence of management expectations for periodic management field presence to observe RGD oversight activities. Management presence would demonstrate support, leadership, and offer the potential for gaining field experience and lessons learned.

Though the Contractor performs routine assessments of Contractor operations, the Contractor stated during an interview there was no procedural requirement to assess subcontractor radiological control programs since the radiography subcontractor was licensed by the State of Washington. While there are no legal or contractual requirements, standard industry practice holds prime contractors responsible for subcontractor radiological performance.

The soil densitometry subcontractor's source trailer was missing "Caution – Radioactive Material" signs from two sides of the trailer. Standard nuclear industry practice posts all four sides of source containers, such as trailers, to alert personnel of the hazard.

The soil densitometer subcontractor, and its procedure, described use of orange "safety" cones to post radiation/high radiation areas in the vicinity of densitometers. Standard industry practice utilizes freestanding metal stanchions for this purpose, not short plastic cones subject to being knocked over or not seen by passers-by.

TDs Not Reviewed, Updated, and Provided No Direction for Record Generation (Improvement Area)

During document reviews and interviews, the Team found no documentation that TDs (i.e., devices used to direct radiation safety tasks) had been reviewed or updated since 2003 and TDs provided no clear direction for record generation. Standard industry practice is to perform annual review and updates of documents which provide direction to workers.

Portable Radiological Survey Instruments Not Stored at the WTP (Improvement Area)

Through interviews, the Team determined portable radiological survey instruments were not stored at the WTP, but rather with the Hanford Site instrumentation subcontractor. Should an instrument be needed after hours (e.g., loss of a radiography source), the Contractor's response time could be slowed while instruments are obtained from the subcontractor.

1.2 WTP Site Contamination Surveys

During review of documents, interviews with personnel, and field Observations, the assessors found the Contractor performed adequate radiological contamination surveys on the WTP Site. The Team also identified mixed results for survey program documentation and made one Observation.

Overall the Team concluded the Radiological Survey Reports (RSR) provided effective, detailed evidence of the following: tasks performed, reasons for the tasks, survey locations, and dose rate readings.

Some Records Exhibited Weaknesses (Program Improvement)

The Team identified weaknesses in the Contractor's documentation process. Some RSRs recorded activities were not described by the RSR cited task description. Some TDs and RSRs listed an incorrect Radiological Work Permit number. The HPTs performed multiple beta/gamma surveys at each WTP Site monitoring location but only documented one set of readings. The HPTs recorded survey results on an engineering tablet, not an original record form, and no units were recorded. Some RSRs had maps of outdoor survey locations but the maps contained no North/South label. Though some tasks recur (e.g., surveys for foreign material during excavation), some RSRs had no task number for the tasks. The Team consider these items as an opportunity for program improvement.

2.0 Conclusions

The Team concluded Contractor surveys and oversight were adequate with the exception of the Finding identified above. The Team made six Observations that included one strength and five areas for improvement.

3.0 Items Opened, Closed, and Discussed

Opened

A-05-ESQ-RPPWTP-010-F01	Finding	A Radioactive Material Area and a High Radiation Area was inappropriately posted.
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Closed

A-05-ESQ-RPPWTP-010-F01	Finding	A Radioactive Material Area and a High Radiation Area was inappropriately posted.
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The Team identified the radiography subcontractor did not properly post its trailer containing radiography sources; the posting colors were faded. A gray bucket was improperly posted “Caution High Radiation Area” because the bucket did not contain a radiation source. The Contractor agreed with the Finding and corrected the postings. The Finding is closed.

Discussed

None.

4.0 Signatures

Submitted by: _____ Date: _____
J. L. Polehn

Submitted by: _____ Date: _____
L. R. McKay