UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

June 27, 2002

EA-02-123

R. T. Ridenoure
Division Manager - Nuclear Operations
Omaha Public Power District
Fort Calhoun Station FC-2-4 Adm.
P.O. Box 550
Fort Calhoun, Nebraska 68023-0550

SUBJECT: NRC RADIATION PROTECTION INSPECTION REPORT 50-285/02-08; PRELIMINARY WHITE FINDING - FORT CALHOUN STATION

Dear Mr. Ridenoure:

On May 17, 2002, the NRC completed an onsite inspection at your Fort Calhoun Station. The enclosed report documents the inspection findings, which were discussed on May 17, 2002, with Mr. D. Bannister, Plant Manager, and other members of your staff on the preliminary results of the inspection. A final telephonic exit was conducted by Mr. G. Pick, Acting Chief, Plant Support, with Mr. E. Matzke, Acting Licensing Supervisor, on June 10, 2002.

This inspection examined activities conducted under your license as they relate to access control of radiologically significant areas, performance indicator verification, radioactive material processing and transportation, and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection involved a selected examination of procedures, representative records, observations of activities, and interviews with personnel.

This report discusses a finding that appears to have low-to-moderate safety significance. As described in Section 2PS2 of this report, the failure to prevent radiation levels from exceeding 200 millirem per hour at any point on the external surface of a shipment package is an apparent violation of 10 CFR Part 20 and Department of Transportation requirements. The finding was assessed using the Public Radiation Safety Significance Determination Process, and was preliminarily determined to be White, a finding with some increased importance to safety that may require additional NRC inspection. The finding has a low-to-moderate safety significance because the radiation levels on the external surface of the shipment package (sea-land container) exceeded the Department of Transportation radiation limit; however, the radiation levels did not exceed five times the limit. Because of the location of the source of radiation on the package during transport and the performance of a time-motion study, your staff determined that no members of the public came in close proximity to the package during shipment and, therefore, the shipment did not present an immediate safety concern to members of the public.

Your staff took immediate corrective actions, pending the completion of a root cause analysis, to have any radioactive waste greater than 100 millirem per hour tracked and logged as to placement within its shipment package. In addition, any waste greater than 200 millirem per hour will be supervised by radiation protection supervision and all shipments will be approved by the manager, radiation protection, prior to leaving the site.

The finding is also an apparent violation of NRC requirements and is being considered for escalated enforcement action in accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions" (Enforcement Policy), NUREG-1600. The current Enforcement Policy is included on the NRC's website at www.nrc.gov.

We believe sufficient information was available to make this preliminary significance determination. However, before we make a final decision on the matter, we are providing you an opportunity to present to the NRC your perspectives on the facts and assumptions used by the NRC to arrive at the finding and its significance, either at a Regulatory Conference or through the submittal to the NRC of your position in writing. If you choose to request a Regulatory Conference, it should be held within 30 days of the receipt of this letter and we encourage you to submit supporting documentation at least one week prior to the conference in an effort to make the conference more efficient and effective. If a Regulatory Conference is held , it will be open for public observation. If you decide to submit only a written response, such submittal should be sent to the NRC within 30 days of the receipt of this letter.

Please contact Ms. Gail Good, Chief, Plant Support Branch, at (817)860-8215 within 10 business days of the date of this receipt of this letter to notify the NRC of your intentions. If we have not heard from you within 10 days, we will continue with our significance determination and enforcement decision and you will be advised by separate correspondence of the results of our deliberations on this matter.

Since the NRC has not made a final determination in this matter, no Notice of Violation is being issued for this inspection finding at this time. In addition, please be advised that the number of examples and/or characterization of apparent violations described in the enclosed inspection report may change as a result of further NRC review.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Elmo C. Collins, Director
Division of Reactor Safety

Docket: 50-285
License: DPR-40

Enclosure:
NRC Inspection Report No.
50-285/02-08

cc w/enclosure:
Mark T. Frans, Manager
Nuclear Licensing
Omaha Public Power District
Fort Calhoun Station FC-2-4 Adm.
P.O. Box 550
Fort Calhoun, Nebraska 68023-0550

James W. Chase, Division Manager
Nuclear Assessments
Fort Calhoun Station
P.O. Box 550
Fort Calhoun, Nebraska 68023-0550

David J. Bannister, Manager - Fort Calhoun Station
Omaha Public Power District
Fort Calhoun Station FC-1-1 Plant
P.O. Box 550
Fort Calhoun, Nebraska 68023-0550

James R. Curtiss
Winston & Strawn
1400 L. Street, N.W.
Washington, D.C. 20005-3502

Chairman
Washington County Board of Supervisors
Washington County Courthouse
P.O. Box 466
Blair, Nebraska 68008

Sue Semerena, Section Administrator
Nebraska Health and Human Services System
Division of Public Health Assurance
Consumer Services Section
301 Centennial Mall, South
P.O. Box 95007
Lincoln, Nebraska 68509-5007

Nancy E. Lawrence, Director
Division of Radiological Health
L&C Annex, Third Floor
401 Church Street
Nashville, TN 37243-1532

Electronic distribution from ADAMS by RIV:
Regional Administrator **(EWM)**
DRP Director **(KEB)**
DRS Director **(ATH)**
Sanborn **(GFS)**
Senior Resident Inspector **(WCW)**
Branch Chief, DRP/C **(CEJ1)**
Plant Support Chief (**GMG**)
Senior Project Engineer, DRP/C **(RVA)**
Staff Chief, DRP/TSS **(PHH)**
RITS Coordinator **(NBH)**
RidsNrrDipmLipb
Scott Morris **(SAM1)**
FCS Site Secretary **(NJC)**
Dixon-Herrity **(JLD)**
OEMAIL

DOCUMENT NAME: S:\DRS\REPORTS\FC2002-08-rp-drc.wpd

DRS:HP	C:PSB	DRP/C	ACES	DRS:D
DRCarter*	GAPick*	CJohnson*	GSanborn*	ECCollins
		WCW for	w/comments	/RA/
6/17/02	6/17/02	6/19 /02	6/20/02	6/27/02

OFFICIAL RECORD COPY *previously concurred T=Telephone E=E-mail F=Fax

ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket:	50-285
License:	DPR-40
EA No.	EA-02-123
Report No:	50-285/02-08
Licensee:	Omaha Public Power District
Facility:	Fort Calhoun Station
Location:	Fort Calhoun Station FC-2-4 Adm P.O. Box 399, Hwy. 75 - North of Fort Calhoun Fort Calhoun, Nebraska
Dates:	May 13-17, 2002
Inspector:	Daniel R. Carter, Health Physicist, Plant Support Branch
Approved By:	Elmo C. Collins, Director Division of Reactor Safety

SUMMARY OF FINDINGS

Fort Calhoun Station
NRC Inspection Report 50-285/02-08

IR 05000285-02-08; Omaha Public Power District; on May 13-17, 2002; Fort Calhoun Station; Radioactive Material Processing and Transportation and Access Control to Radiologically Significant Areas.

A regional health physics inspector conducted this inspection. The inspector identified an apparent white finding and a green finding that is being treated as a noncited violation. The significance of most findings is indicated by their color (Green, White, Yellow, Red) and determined by using Inspection Manual Chapter 0609, "Significance Determination Process (SDP)." The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. Inspector Identified Findings

Cornerstone: Public Radiation Safety

TBD. An apparent finding of low-to-moderate risk significance (White) was identified for failure to comply with Department of Transportation (DOT) regulations. On April 24, 2002, the licensee shipped dry active waste in a sea-land container to a radioactive waste processing vendor. When the sea-land container arrived, dose rates on the exterior surface exceeded the 200 millirem per hour limit as specified in the DOT regulations. The vendor found that dose rates were approximately 600 millirem per hour. 10 CFR 71.5 requires each licensee who transports licensed materials offsite or on public highways to comply with the requirements in 49 CFR Parts 170 through 189. 49 CFR 173.441(a) requires that each package of Class 7 (radioactive) material offered for transportation be designed and prepared for shipment so that, under conditions normally incident to transportation, the radiation level does not exceed 200 millirem per hour at any point on the external surface of the package.

The failure to prevent radiation levels from exceeding 200 millirem per hour at any point on the external surface of a sea-land container was a performance deficiency. The finding was more than minor because it was associated with one of the Public Radiation Safety cornerstone attributes (DOT package radiation limits) and affected the associated cornerstone objective. Using the Public Radiation Safety Significance Determination Process, the inspector preliminarily determined the finding had low-to-moderate risk significance because the radiation levels on the external surface of the sea-land container exceeded the DOT radiation limit; however, the radiation levels did not exceed five times the limit. This violation is being treated as an apparent violation consistent with the NRC Enforcement Policy. The licensee documented this event in the corrective action program as Condition Report 2002-01009 (Section 2PS2).

Cornerstone: Occupational Radiation Safety

Green. The inspector identified a violation of very low safety significance because workers failed to obtain a radiological briefing prior to working in an unsurveyed area. On May 15, 2002, the inspector observed two workers installing scaffolding on top of Safety Injection Tank 6B, an area 10 feet above the designated work location that had not been surveyed. The workers had not contacted radiation protection personnel prior to entering the area. Technical Specification 5.8.1 requires procedures to be established and implemented as referenced in Regulatory Guide 1.33, Appendix A. Procedure SO-G-101 "Radiation Worker Practices," Step 5.6.1, states, areas in the radiologically controlled area that are greater than 8 feet off the floor are not routinely surveyed and requires workers to contact radiation protection prior to entering these areas to obtain a briefing on radiological conditions.

The failure to obtain a radiological briefing prior to working in an unsurveyed area was a performance deficiency. The finding was more than minor because it was associated with one of the Occupational Radiation Safety cornerstone attributes (training proficiency) and affected the associated cornerstone objective. The finding involved an occurrence of workers unplanned, unintended dose or potential of such a dose that could have been significantly greater, as a result of a single minor, reasonable alteration of the circumstances. Using the Occupational Radiation Safety Significance Determination Process, the inspector determined the finding had very low safety significance because no overexposure resulted or no substantial potential for an overexposure occurred. The licensee documented this violation in the corrective action program as Condition Report 2002-01512. The finding is considered a noncited violation consistent with Section VI.A.1 of the NRC Enforcement Policy (Section 2OS1).

B. Licensee Identified Violations

Violations of very low safety significance, which were identified by the licensee have been reviewed by the inspectors. Corrective actions taken or planned by the license have been entered into the licensee's corrective action program. These violations and corrective action tracking numbers are listed in Section 4OA7 of this report.

2 RADIATION SAFETY

2PS2 Radioactive Material Processing and Transportation (71122.02)

a. Inspection Scope

The inspector interviewed radiation protection personnel involved with Radioactive Material Shipment FCS-NW-02-08 to a vendor waste processing facility. The inspector also reviewed associated shipping papers, surveys, bill of ladings, manifests, and corrective action documents and compared them with regulatory requirements.

b. Findings

The inspector identified an apparent finding of low-to-moderate risk significance (white) for the failure to comply with Department of Transportation (DOT) regulations. On April 24, 2002, the licensee had shipped dry active waste in a sea-land container to Duratek Incorporated, a radioactive waste processing vendor in Oak Ridge, Tennessee. Upon arrival, the waste processing vendor determined that dose rates on the exterior surface of the sea-land container exceeded the 200 millirem per hour limit, as specified in DOT regulations.

When the shipment arrived, Duratek found that dose rates were approximately 600 millirem per hour at a localized location on the surface of the sea-land container. The location of the high reading was on the left side of the container approximately 1 foot back from the front and 1 foot down from the top, approximately 12 feet above ground level. Upon discovery, Duratek moved the sea-land container to a remote area pending notification of the State of Tennessee and the licensee. The State of Tennessee notified the NRC Region IV office on April 25, 2002.

The shipment manifest (NRC Form 540) listed the contents as “Radioactive Material, low specific activity, n.o.s., Class 7, UN2912, Fissile Excepted.” The licensee shipped the sea-land container as an exclusive use shipment. The shipping papers and final radiation survey prior to leaving the plant indicated that the highest contact dose rate was 75 millirem per hour on the external surface of the sea-land container.

On May 1, 2002, the licensee dispatched a radiation protection technician to the Duratek facility to perform confirmatory radiation measurements. The technician measured 450 millirem per hour dose rates on the surface of the sea-land container. During unloading of the sea-land container, the technician identified a bag laying directly against the side of the container with radiation levels as high as 500 millirem per hour. The technician determined that the bag was on top of the heap of trash bags and concluded that the bag probably shifted during transport. The licensee interviewed the driver of the shipment, performed a time-motion study, and determined that no members of the public came in close proximity to the shipment during transport.

The failure to prevent radiation levels from exceeding 200 millirem per hour at any point on the external surface of the sea-land container was a performance deficiency. The finding was more than minor because it was associated with one of the Public Radiation

Safety cornerstone attributes (DOT package radiation limits) and affected the associated cornerstone objective. Using the Public Radiation Safety Significance Determination Process, the inspector preliminarily determined the finding to be of low-to-moderate risk significance because the radiation levels on the external surface of the shipment package exceeded the DOT radiation limit; however, the radiation levels did not exceed five times the limit.

This finding also constitutes an apparent violation of NRC requirements. 10 CFR 71.5 requires each licensee who transports licensed materials offsite or where transport is on public highways shall comply with the requirements of the DOT regulations in 49 CFR Parts 170 through 189. 49 CFR 173.441(a) requires that each package of Class 7 radioactive material offered for transportation (the sea-land container) must be designed and prepared for shipment so that, under conditions normally incident to transportation, the radiation level does not exceed 200 millirem per hour at any point on the external surface of the package. Because of the location of the source of radiation on the sea-land container and the determination by the licensee that no members of the public came in close proximity to the shipment during transport, the violation did not present an immediate safety concern. The licensee took immediate corrective actions, pending the completion of a root cause analysis, to have any radioactive waste greater than 100 millirem per hour tracked and logged as to placement within its shipment package. Radiation protection supervision will supervise the packaging of any waste with dose rates greater than 200 millirem per hour. Further all shipments will be approved by the manager, radiation protection, prior to leaving the site. This apparent violation is being considered for escalated enforcement consistent with the NRC Enforcement Policy. This violation was entered into licensee's corrective action program as Condition Report 2002-01009 (AV 50-285/2002-08-01).

2OS1 Access Control to Radiologically Significant Areas (71121.01)

a. Inspection Scope

The inspector interviewed radiation workers and radiation protection personnel involved in high dose rate and high exposure jobs during Refueling Outage 20. The inspector conducted plant walkdowns within the radiologically controlled area and conducted independent radiation surveys of selected work areas. The following items were reviewed and compared with regulatory requirements:

- Area postings and other controls for airborne radioactivity areas, radiation areas, high radiation areas, locked high radiation areas, and very high radiation areas

- Radiation work permits and radiological surveys involving airborne radioactivity areas and high radiation areas

- Access controls, surveys, and radiation work permits for the following five potential high radiation dose work areas during the refueling outage: RWP's 02-3509 and 02-3510, "Primary Side Steam Generator Work;" RWP 02-3512, "Reactor Head Removal/Replacement;" RWP 02-3514, "Reactor Coolant Pump Work in Restricted High Radiation Areas;" and RWP 02-3530,

"Reactor Head, CEDM Upper Housing and Seal Housing Inspections and Maintenance"

- Dosimetry placement for work involving a potential significant dose gradient
- Controls involved with the storage of highly radioactive items in the spent fuel pool
- Quality Assurance Surveillance Reports H-00-2, H1-01-1, and H3-01-1 and Radiation Protection Program Self-Assessment Report CHP-01-20 involving high radiation area controls and radiological work practices
- A summary of access controls and high radiation area work practice related condition reports written since August 2001and selected specific examples: (CR-001-03732, CR-2001-03659, CR-2001-01545, CR-2001-01553, CR-2001-00226, CR-2001-00357, CR-2001-00669, CR-2001-00710, CR-2001-00805, CR-2001-00825, CR-2001-02659, CR-2001-01480, CR-2001-00933, CR-2001–1355, CR-2001-01099, CR2001-01433, CR-2001-01776, CR-2001-01186, CR-2002-00939, and CR-2002-01327)

b. Findings

The inspector identified a noncited violation of very low safety significance (Green) because workers failed to obtain a radiological briefing prior to working in an unsurveyed area.

On May 15, 2002, the inspector observed two workers installing scaffolding on top of the Safety Injection Tank 6B inside the containment building. When questioned, the workers acknowledged that they had not been briefed on the radiological conditions in which they were working. The inspector determined that the area had not been surveyed. The workers climbed into an area approximately 10 feet above their designated work location prior to contacting radiation protection personnel.

The failure to obtain a radiological briefing prior to working in an unsurveyed area was a performance deficiency. The finding was more than minor because it was associated with one of the Occupational Radiation Safety cornerstone attributes (training proficiency) and affected the associated cornerstone objective. The finding involved an occurrence of workers unplanned, unintended dose, or potential of such a dose that could have been significantly greater as a result of a single minor, reasonable alteration of the circumstances. Using the Occupational Radiation Safety Significance Determination Process, the inspector determined the finding had very low safety significance because there was no overexposure or substantial potential for an overexposure.

Technical Specification 5.8.1 requires procedures to be established and implemented as referenced in Regulatory Guide 1.33, Appendix A. Procedure SO-G-101 "Radiation Worker Practices," Step 5.6.1, states, that areas in the radiologically controlled area that are greater than 8 feet off the floor are not routinely surveyed and that workers are to contact radiation protection prior to entering these areas. The violation was entered into

the licensee's corrective action program as Condition Report 2002-01512, and is being treated as a noncited violation consistent with Section VI.A.1 of the NRC Enforcement Policy. (NCV 50-285/2002-08-02)

4. OTHER ACTIVITIES [OA]

4OA1 Performance Indicator Verification (71151)

.1 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspector reviewed corrective action program records involving restricted high radiation areas (as defined in Technical Specification 5.11), very high radiation areas (as defined in 10 CFR 20.1003), and unplanned exposure occurrences (as defined in NEI 99-02) for the past 12 months to confirm that these occurrences were properly recorded as performance indicators. Controlled access area entries with exposures greater than 100 millirems within the past 12 months were reviewed, and selected examples were examined to determine whether they were within the dose projections of the governing radiation work permits. The inspector reviewed whole-body counts or dose estimates if the radiation worker received a committed effective dose equivalent of more than 100 millirems.

b. Findings

No findings of significance were identified.

.2 Radiological Effluent Technical Specification/Offsite Dose Calculation Manual Radiological Effluent Occurrences

a. Inspection Scope

The inspector reviewed radiological effluent release program corrective action records, licensee event reports, and annual effluent release reports documented during the past four quarters to determine if any doses resulting from effluent releases exceeded the performance indicator thresholds (as defined in NEI 99-02).

b. Findings

No findings of significance were identified.

4OA6 Management Meetings

Exit Meeting Summary

The inspector presented the inspection results to Mr. D. Bannister, Plant Manager, and other members of licensee management at the conclusion of the onsite inspection on May 17, 2002. The licensee acknowledged the findings presented.

A final telephonic exit discussing the results of the Significance Determination Process and Enforcement Review Panel was conducted by Mr. G. Pick, Chief, Plant Support, with Mr. E. Matzke, Acting Licensing Supervisor, on June 10, 2002. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

4OA7 Licensee-Identified Violations

The following finding of very low safety significance was identified by the licensee and is a violation of NRC requirements, which meets the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600 for being dispositioned as a noncited violation.

Requirement Licensee Failed to Meet

Technical Specification 5.11.1 requires any individual permitted to enter a high radiation area be provided with a radiation monitoring device that continuously integrates the radiation dose rate in the area and alarms when a preset dose is received. Entry into such areas may be made after the dose rate level in the areas have been established and personnel have been made knowledgeable of them. On May 14, 2002, an individual entered a high radiation area without being briefed on the radiological conditions as described in the corrective action program as Condition Report 200201465. Because there was no overexposure or substantial potential for an overexposure and the ability to assess dose was not compromised, this violation is not more than of very low significance, and is being treated as a noncited violation.

ATTACHMENT

Supplementary Information

Licensee Contacts :
D. Bannister, Plant Manager
G. Cavanaugh, Supervisor, Station Licensing
M. Frans, Manager, Nuclear Licensing
S. Gebers, Corporate Health Physicist
R. Haug, Manager, Chemistry
R. Lentz, Licensing Engineer
E. Matzke, Station Licensing Engineer
M. Puckett, Manager, Radiation Protection
J. Ressler, Mechanical Design Engineer
R. Ridenoure, Division Manager, Nuclear Operations

NRC:
W. Walker, Senior Resident Inspector
L. Willoughby, Resident Inspector
J. Grammar, Senior Resident Inspector

ITEMS OPENED AND CLOSED

Opened

50-285/0208-01	TBD	Failure to prevent radiation levels from exceeding regulatory requirements on the external surface of a shipment package (Section 2PS2)

Opened and Closed

50-285/0208-02	NCV	Failure to obtain a radiological briefing prior to entering a unsurveyed area (Section 2OS1)