

**RCE REPORT**

***Prairie Island Nuclear Generating Plant***



***[Radioactive Material Shipment Exceeded DOT Limits]***

***Event Date: October 30, 2008***

**RCE 01157726**

**Rev. 2**

**CAP AR 01157726**

RCE (Team) members:

Root Cause Investigator: Peter Wildenborg

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**RCE Team Leader**

**Date**

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*10-30-09*

**Management Sponsor**

**Date**

NSP000035A

**RCE REPORT**

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***[Radioactive Material Shipment Exceeded DOT Limits]***

***Event Date: October 30, 2008***

**RCE 01157726**

**Rev. 1**

**CAP AR 01157726**

RCE (Team) members:

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**Approvals:**

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<b>RCE Team Leader</b>	<b>Date</b>
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<b>Management Sponsor</b>	<b>Date</b>

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RCE (Team) members:

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## Table of Contents

	Page #
I. Executive Summary .....	5
II. Event Narrative .....	9
III. Extent of Condition Assessment.....	11
IV. Previous Similar Events:.....	19
V. Operating Experience: .....	21
VI. Radiological Safety Significance.....	26
VII. Reports to External Agencies & the NSPM Sites.....	30
VIII. Data Analysis.....	31
A. Information & Fact Sources.....	31
B. Evaluation Methodology & Analysis Techniques .....	32
C. Data Analysis Summary .....	32
D. Failure Mode Summary .....	33
IX. Root Cause and Contributing Causes .....	36
X. Corrective Actions .....	38
XI. References.....	46
XII. Attachments .....	51

NOTE: When the term “discrete particle” is used in this RCE to refer to the radioactive particle that was present on the equipment shipped to Westinghouse or similar particle that could potentially challenge shipping limits for allowable radiation levels, the term is defined as follows:

discrete particle - any radioactive particle with a 1 foot dose rate in excess of 10 mrem per hour with an RO-2, (window closed), or equivalent and can be tracked through a significant gradient (factor of 10) to the discrete radioactive particle.

## I. Executive Summary

### **Problem Statement (As taken from the Charter):**

On Thursday, 10/30/2008, a shipping container was received by the Waltz Mill site that exceeded 10CFR part 71.47 limits for shipping radioactive materials. This was not in accordance with procedure D11.7, section 6.10.6, exceeding 200 mrem/hr on contact with the shipping container on an open transport. The container (Box 311677) was shipped from the Prairie Island facility and contained fuel sipping equipment.

### **Investigation Scope (As taken from the Charter):**

The evaluation will determine the root cause of exceeding DOT shipping limitations as required by 10 CFR 71.47.

The scope of the review will include an investigation of the methods used to determine radiation levels of the components shipped, as well as methods for verifying dose rates on the exterior of the shipping container and the trailer. The investigation will also try to determine the most likely contributor of the changing dose, where the material contributing to the high dose rates came from and why the dose rates changed. Additionally, the RCE will determine any organizational and industry weaknesses that contribute to the probability of incurring transport issues related to radiation dose limits.

### **Problem:**

On 10/31/08, personnel at the Westinghouse facility in Waltz Mill, performing receipt surveys on a shipping container received from Prairie Island, discovered a maximum reading of 2000 mR/hr on contact at the bottom of the container. This exceeded the 10CFR71 and 49CFR173 limits for shipping radioactive material.

On Thursday (10/30/2008), a shipping container sent from Prairie Island was received by the Waltz Mill site. Shipping container 311677 contained fuel sipping equipment. On Friday (10/31/08) after unloading from the flat bed truck, a survey of the shipping container indicated the shipping container exceeded 200 mrem/hr on contact. The maximum contact levels on the shipping container were 1630 mrem/hr on contact. This level exceeded 49CFR 173 Department of Transportation (DOT) limits for shipping radioactive materials and also was not in accordance with Prairie Island procedure D11.7, section 6.10.6, exceeding 200 mrem/hr on contact with a shipping container on an open transport.

This condition potentially existed from 10/29/08 through 10/31/08.

### **Event Synopsis:**

On 10/23/08 after fuel sipping was complete, fuel sipping equipment was removed from the spent fuel pool, decontaminated, surveyed and wrapped. On 10/24/08, the loaded and closed shipping container was surveyed in the Aux Building drop area while on the transport trailer. A small spot on the bottom of the container was measured at 170 mrem/hr with a Telepole in a location corresponding to the canister lid. On 10/29/08

immediately before shipping the container, a radioactive waste shipping coordinator performed a confirmatory survey of the container surface dose rates to verify they were within DOT limits. This survey, performed on 10/29/08, located the spot corresponding to the lid and recorded a maximum contact dose rate of 150 mrem/hr.

The shipment of fuel sipping equipment was sent to Waltz Mill, Pennsylvania on 10/29/08 and arrived on 10/30/08. Personnel at the Westinghouse facility in Waltz Mill performed a receipt survey of the transport vehicle and found no dose rates in excess of DOT shipping limits. The following day (10/31/08), the shipping container was removed from the truck by forklift and a Westinghouse RP Technician performed a thorough survey of the shipping container. The survey recorded a maximum reading of 2000 mR/hr on contact at the bottom of the container with local instrumentation. Westinghouse personnel identified this and notified Xcel Energy at that time. The maximum dose rate found on the bottom of the container with a Telepole (the instrument used to release the shipment) was 1630 mrem/hr on contact at the bottom of the container.

**Conclusions:**

Prairie Island did not have adequate barriers within the Radioactive Material Shipping Program (RMSP) to ensure DOT shipping limits are not exceeded. Several programmatic weaknesses aligned to allow the rad shipment to occur:

- The initial survey on the fuel sipping equipment was focused on personnel dose concerns and not obtaining a representative survey for rad shipment.
- The packaging of the equipment was not sufficient to ensure the materials would not shift during transport.
- The loading of the equipment was not observed by rad shipping personnel and was incorrect in consideration of discrete particles.
- The shipment of this type of material was not elevated as a priority to the site, because there is no formal guidance on what is significant in the Radioactive Material Shipping Program.

Correction of any one of these failed barriers may have prevented this event from occurring. A robust RMSP would incorporate all of these actions to ensure radioactive material shipment issues do not occur. Relying on any single barrier (i.e., a good survey) to prevent rad shipping issues would not indicate a robust program.

The root causes of this event are centered on poor processes, oversight requirements, and procedure quality. None of these required the knowledgeable human involvement to ensure successful completion of the shipping processes. The lack of multiple, mandatory, barriers led to the eventual failure and subsequent event. As a result, a singular failure of Human Performance barriers was not considered a major contributor to the overall failures that led to this event.

**Radiological Safety Significance:**

The location of the elevated radiation levels on the bottom of the box mitigated exposure to the general public to radiation levels in excess of regulatory limits. The shipping

container was not moved once placed on the trailer and the trailer was an exclusive use shipment to the Waltz Mill site. The area between the container and the flatbed trailer was not accessible to the whole body of public or rad worker personnel during transport.

There was potential for dose rates in excess of regulatory limits in an accessible area of the container. If the contents of the container had shifted to the side of the box versus the bottom, the container dose rates in excess of regulatory limits would have been accessible and the potential for exposure to the public would have been elevated.

The shipping transport vehicle survey readings (cab and trailer readings) were within regulatory limits and the movement of materials within the container would not have significantly affected the dose rates of the shipping transport vehicle.

There was no risk to the plant or plant workers.

#### **Root Cause and Contributing Causes:**

The root causes have been identified as:

**RC1. Radiation Protection and Chemistry procedures do not describe the methods required to successfully evaluate, package, and ship materials in accordance with 49CFR173 and 10CFR71.**

**RC2. The significance the site has assigned the Radioactive Material Shipping Program (RMSP) does not align with the potential adverse consequences.**

The contributing causes have been identified as:

**CC1 Industry Experience has not been effectively incorporated into the RMSP.**

**CC2 The training and certification programs for RP personnel who perform shipping related activities do not meet industry standards.**

#### **Inappropriate Actions:**

Several Inappropriate actions were identified during the investigation:

- IA# 1 Workers did not package the fuel sipper cables to prevent shifting IAW D11.7. (see why staircase 2.0)
- IA# 2 RWSC did not verify that the survey or packaging was adequate for shipping. (see why staircase 3.2.2)
- IA# 3 Shipping was not specifically addressed in WO 367253 as required by FP-RP-JPP-01, step 5.5. (see why staircase 4.0)

Per the root cause guide, these inappropriate actions were evaluated to determine causal factors. These causal factors were grouped and further analyzed to determine the root and contributing causes.

**Corrective Action Synopsis:**

Corrective actions are focused on addressing the programmatic opportunities identified during the evaluation that identified the root and contributing causes.

The corrective actions will make appropriate changes to the RMSP shipping procedures to drive involvement of personnel to monitor activities that may elevate risk. Those activities are: the initial characterization of the equipment to be shipped, the wrapping of the equipment for transport, loading of the equipment in the shipping container, and an evaluation of survey differences between the container and vehicle survey results. Several corrective actions have also been created to coordinate Radiation Protection Technician involvement in RMSP activities.

Changes are required for site procedures to ensure that proper levels of approval authority are required for successively higher levels of risk encountered in rad shipments. Rad Shipping program procedures will clearly define varying requirements for different levels of risk significant rad shipments. RP department procedures will contain guidance for handling discrete particles, particularly for equipment that will be shipped.

Additional changes will be made to the RMSP to ensure there are ties to the industry to encourage continuous review and improvement of the program and maintain industry standards. The issue of discrete particles was a significant industry issue, as determined by the number of operating experience promulgated. Prairie Island did not allocate the time or effort to ensure the program was maintained to increasing standards.

A specialty task will be added to the RPT qualification program for field activities to ensure RMSP personnel have adequate focus to ensure sufficient barriers that prevent radioactive material shipment issues. Specific checks for adequate qualification for personnel involved in rad shipping evolutions have been included in the RMSP procedures.

**Reports to External Agencies & the NSPM Sites:**

Per 10 CFR 20.1906(d)(2), the reporting responsibility for a shipping event lies with the receiver of the shipment. In this case, the Westinghouse Radiation Safety Officer notified the State of Pennsylvania Department of Environmental Protection (PADEP) and Southern Pines Trucking in accordance with 25 CFR 219.5 and 219.6 (Pennsylvania statutes), which incorporate 10 CFR 20.1906(d). Informal communication with NRC Region III and the Resident Inspectors was also conducted.

An internal Operating Experience report was filed (11/11/2008) as part of this event. A nuclear network message was promulgated via GAR 01158434.

## II. Event Narrative

### Event Narrative:

On Friday (10/31/2008), a radioactive shipment that arrived on 10/30/08 at the Westinghouse Waltz Mill facility was determined to have exceeded the 49CFR173 DOT package dose rate limit of 200 mrem/hr on contact. After the shipping container was unloaded from the trailer (10/31/08), the maximum measured contact dose rate was 1630 mrem/hr on the underside of the container. Pre-shipment surveys conducted at Prairie Island had indicated a maximum contact dose rate of 170 mrem/hr, which implies that radiological material shifted inside the shipping container while en-route to Waltz Mill.

Approximately two weeks prior to the start of the 2R25 refueling outage (9/2/08), a request to add spent fuel assembly sipping activities to the outage scope (for the purpose of screening assemblies for future dry cask loading) was approved by the outage scope committee. Performing this work during the outage was believed to have a cost savings associated with it because Westinghouse personnel would be on site and available to perform the work during an extended no-mode window. The station received a new (new design, non-radioactive) fuel sipping apparatus (9/12/08) for use during the outage.

The sipping equipment was used during the 2R25 outage to test used fuel bundles for defects. After this operation was complete (10/23/08), the equipment was removed from the spent fuel pool, decontaminated, surveyed and wrapped. The sliding, removable lid that forms the top of the sipping canister was decontaminated to a contact reading of 120 mrem/hr and 50 mrem/hr at 30 cm. It was wrapped and tagged with dose rate and contamination levels. The lid was placed in the bottom of the vendor-supplied shipping container (10/24/08). The wrapped canister was placed on installed cribbing inside the same shipping container and the container was closed and secured. The loaded shipping container was transferred to the transport trailer and surveyed while the trailer was in the Aux Building drop area. Prior to placing the container on the trailer (while still suspended), the entire bottom of the container was surveyed. During this survey, a small spot on the bottom of the container indicated 170 mrem/hr in a location corresponding to the canister lid. This was documented on a Caution Radioactive Materials Tag and placed on the container. The container was then set on the truck bed.

Immediately before shipping the container (10/29/08), a RWSC performed a confirmatory survey of the container surface dose rates to verify they were within DOT limits. This survey located the spot corresponding to the lid and recorded a maximum contact dose rate of 150 mrem/hr. Both surveys of this spot were completed using a small diameter probe. The shipment was released from Prairie Island on 10/29/08 and arrived at Waltz Mill, Pennsylvania the next day.

Personnel at the Westinghouse facility in Waltz Mill performed a receipt survey of the transport vehicle and found no dose rates in excess of DOT shipping limits. The flat bed trailer and shipping container were placed in an RCA. The following day (10/31/08), the shipping container was removed from the truck by forklift and a Westinghouse RP Technician performed a thorough survey of the shipping container. The survey recorded a

maximum reading of 2000 mrem/hr on contact at the bottom of the container. Westinghouse personnel notified Xcel Energy at that time. The box was left in this area without opening (at Xcel's request) until the Xcel fleet RPM and a Radiation Protection Technician traveled to the Westinghouse facility (11/03/08) to gather data and to conduct an investigation. The maximum dose rate found on the bottom of the container with a Telepole (the instrument used to release the shipment) was 1630 mrem/hr on contact at the bottom of the container.

### III. Extent of Condition Assessment

#### Extent of Condition

The extent of condition is defined as materials being shipped that exceed DOT shipping regulations. The condition of not meeting shipping requirements could apply to any material that is being shipped from the site that has the potential for containing radioactive material.

Currently there are no shipments of radioactive or hazardous materials in progress. A search of the CAP data base was performed to determine if past problems have been identified during shipments. The search used AR origination date range of 1/1/2006 to 12/31/2008 (3 years) and used the following key words in the AR Subject and AR Description & Notes field: shipment, hazardous material, hazmat, DOT, tritium, asbestos, and PCB. The search results were reviewed looking for ARs related to shipping.

The following applicable CAPs were found:

AR01058797 (10/31/2006), Hazardous Material Shipment completed without required signature. Summary: NALCO delivered an incorrect product to PI. When the product was returned to NALCO, PI should have initiated hazardous waste shipping papers. Action initiated to provide DOT training. Training completed during April and May, 2007 and curriculum added to learning management system (LMS).

AR01078953 (02/23/2007), Radioactive shipment without packing slip. Summary: Receiving Warehouse received a Radiological shipment without the proper paper work included. Individual took control of package and notified the RWSC. No corrective actions were taken.

AR01086930 (04/10/2007), Improperly filled out sample shipment paperwork. Water samples are shipped off site for vendor analysis for tritium. Summary: A sample was inappropriately checked as being sent when it was not. Human performance error - inattention to detail was identified. This CAP was closed to trend, and no corrective actions were taken.

AR01056394 (10/18/2006), Evaluate DOT HazMat training requirements for non-compliance. Determine who is required to receive DOT HazMat training per federal regulations. Summary of action completed: DOT hazardous waste training was provided to applicable Mechanical Maintenance personnel. Training was provided By Xcel Energy training Representative who specializes in environmental hazardous waste and DOT issues. Training was completed on 4/17/07, 4/24/07, 5/1/07 and 5/8/07.

AR01065488 (12/04/2006), Transportation laws for tritium powered weapons sights. Draft an attachment to SIP 4.3 in accordance with Fleet direction to ensure site compliance with Federal laws pertaining to the land vehicle transport and use of security weapons sights containing a tritium source. This Federal requirement is contained in Title 49 CFR 172, HAZMAT Transport. Closed to Fleet AR01070141, NMC Compliance with 49CFR172.421-424 & 173.H is in question. Action taken: Procedure Revisions to address DOT Regulations for tritium transport.

AR01093013 (05/17/2007), Return of Safety Related Batteries to Vendor Delayed. Summary: Numerous delays occurred in shipment. CE was performed and one issue identified was lack of ownership to get the batteries shipped. There was no single point of contact. The corrective action for this event included providing coaching to the departments involved.

The evaluation of extent of condition has determined there have been no findings of significance in other areas where materials are shipped in the past 3 years. The analysis does show an appropriate threshold for identifying shipping related issues in these other processes, therefore the extent of condition is limited to radioactive materials shipped using the RMSP.

#### Extent of Cause

The extent of cause analysis determines if the root causes of this problem have impacted other plant processes, equipment or human performance. Five distinct areas are considered for extent of cause:

- Environment – Do the causes impact other work environments or locations?
- Equipment – Do the causes impact other equipment, systems or set of components?
- People – Do the causes impact other personnel (other than those involved) or other human performance issues?
- Organization – Do the causes impact other crews, departments or organizations?
- Process – Are there identical or similar processes or procedures that may be impacted by the causes?

The methods used are to compare in the following manner:

- Identical to Identical (same – same);
- Identical to Similar (same – similar);

#### Root Causes:

- RC1. Radiation Protection and Chemistry procedures do not describe the methods required to successfully evaluate, package, and ship materials in accordance with 49CFR173 and 10CFR71.**
- RC2. The significance the site has assigned the Radioactive Material Shipping Program (RMSP) does not align with the potential adverse consequences.**

**Scope of the Extent of Cause**

The scope of the Extent of Cause for RC1 includes RP shipping procedures and procedures that affect shipping such as the Hot Particle Program and procedures covering shipping of all kinds of hazardous materials. This adequately addresses the Same-Same and Same-Similar guidelines for extent of cause. Additionally, RC1, procedures not sufficiently describing methods to achieve successful outcomes, potentially extends to all departments and processes on site. The analysis of site procedures beyond hazmat shipping and related RP procedures is limited to actual impacts of inadequate procedural guidance that rise to a level that results in a Root Cause Evaluation and that result in department-wide procedure improvement initiatives. The conclusions of this site-wide EOC are contained in an addendum at the end of this section. Supporting documents are listed in the XI. References section of this report.

Environment – the work environment involved is not impacted by the process requirements or methods, and is not impacted by the priorities. Other work environments are not impacted by either cause. (D84)

Equipment – Equipment was not identified as a significant condition so therefore was not evaluated in the extent of cause for either cause. (D84)

People – Environmental has only a single individual with no dedicated backup at this time, however they use Xcel Corporate Environmental team for peer checking. Warehouse has multiple people who are qualified for loading and unloading. Chemistry, Security and Construction have multiple individuals who are trained to complete the tasks assigned for shipping per information obtained during interviews. Quality Assurance used to have people doing QC inspections on shipments (some were radioactive shipments) but this has been eliminated. The inspections completed by QC did not have any radiological function associated with them. (D84)

Rule based space has people operating with procedures but the procedures are disjointed or not prescriptive and lead people into knowledge based space where they have to interpret what is meant. This increases the chances of human performance errors. (D84)

Organizations – Quality Assurance, Warehouse, Environmental, Chemistry, Security and Construction all were determined to be areas that may be involved in shipping materials that are subject to regulations. (D84)

Processes – Thirteen procedures were evaluated and seven are not robust in their description of the methods required to successfully evaluate, package and ship material in accordance with requirements. (D84)

Quality Assurance

QCIM-R-01 is no longer relevant, old procedure.

Conclusion:

QCIM-R-01 is active but there is no reference to this anywhere, no longer used, and was replaced by QATR. (D85)

#### Warehouse

Warehouse relies on an individual from Radiation Protection for rules and regulations regarding shipping items that may contain radioactive materials. Radioactive items have additional requirements from the DOT that are not part of warehouse personnel expertise.

Sending DOT Hazardous Materials, (chemicals, lead, batteries, etc.) rely on individual from Environmental/Chemistry regarding requirements from DOT. Loading and unloading materials requires drivers obtain Xcel provided DOT Hazmat training.

Shipping guidelines from the QA program are utilized (NQA1 sub part B) for safety related parts. This is used mainly to protect the part itself from damage or moisture and metals. FP-SC-RSI-04 Material Return Receipt is utilized for when to use crating, pallets, protect from sharp edges.

Xcel provided DOT Hazardous shippers training and the DOT reference book as found on-line at Expressnet are utilized for information as well as loading and unloading requirements.

#### Conclusion:

FP-SC-RSI-04 Material Return Receipt procedure was determined to be adequate. (D87)

#### Environmental

A corporate Environmental peer check is obtained when shipping and receiving hazardous materials. The corporate Environmental team will check or fill out paperwork. DOT demands training and refresher training every three years.

D14.5 – Hazardous and Non-Hazardous Material Storage, Disposal and Labeling Requirements, D14.8 – Regulated Waste Management and PINGP1400 – Checklist for Hazardous Material shipments.

These procedures need some improvements to make them more readily usable. A requisition has been sent to hire a contractor to re-write these procedures within the next quarter.

DOT rules are utilized on waste management and shipping compliance via an on-line manual as provided by Corporate Environmental group (used to be hard-copy manual, this was changed to on-line for ease of updating and reference.) DOT specifies types

of containers to use and even if shifting or transporting problems occur, the shipment will be safe.

**Conclusion:**

D14.5 and D14.8 were determined to be adequate with room for improvements as listed. PINGP 1400 is adequate but not currently referenced in any site procedures.

Chemistry

Samples of septic tanks are sent via RPIP 4518 per 10CFR20 section 20.2003. This is a very specific procedure, easy to follow.

Technicians count samples for activity frequently. If the samples need to be sent out, Chemistry personnel rely on individuals from Radiation Protection to receive and ship within requirements. Chemistry staff is not required to know these processes.

Occasionally Chemistry is required to transport large amounts of chemicals via personal vehicles. They would receive a briefing from an individual from Environmental/Chemistry as to DOT regulations. Most items, however, are smaller quantities and considered exempt quantity per DOT.

Most Chemistry technicians ship samples. Samples requested are done through work orders. All work orders now have form PINGP 1409 to be completed to indicate if hazardous material or not. If individual does not know if item is hazardous, they are to contact Environmental/Chemistry. If not hazardous, then N/A is allowed on this sheet.

Proper labeling and packaging is specified through Xcel book or CFR requirements – if unsure, go to Environmental/Chemistry individual or utilize Minneapolis Environmental group and on-line book.

**Conclusion:**

RPIP 4518 Septic Tank Sampling – Section 5.0 is adequate. (D86)

No procedure was provided that shows requirements for transporting chemicals via personal vehicle. Recommend adding to plant access training program.

RPIP 3105, Preparing Oil, Fuel, and Special Samples for Shipment are adequate. (D91)

PINGP 1409 is adequate. (D92)

Security

Safeguards information is explicit and detailed in regards to transporting as outlined in FP-S-SGI-01.

Tritium transporting regulations had been violated and procedure was changed to now be more specific on how to transport and address that issue. Shipment containers for search, as well as ammunition and weapons transportation requirements are also well

documented in Security procedure SEC 4.5. Any other items required to be transported/shipped are turned over to the warehouse.

**Conclusion:**

SIP 4.5 Firearms Inventory, Inspection, Cleaning & Maintenance - Attachment 8 is prescriptive on how to transport Firearms, Ammunition and Tritium. (D96)  
FP-S-SGI-01 – Section 5.0 is prescriptive in how to identify, access via electronic and transport hard copies of Safeguards information. (D95)

Construction

Construction personnel utilize State of Minnesota guidelines MPSA, OSHA Guidelines and Pollution Control Guidelines. If sending out asbestos (usually once every three years), a licensed individual fills out the manifest, and labels the dumpster. Licensing is done through the State of Minnesota and re-qualification is done annually.

As far as other hazardous material – construction is a supporting group that relies on Radiation Protection or Environmental/Chemistry groups as the ones who have the procedures and requirements to move/package within the required parameters.

**Conclusion:**

D74 Site Asbestos, Section 15-18; is prescriptive with the exception that reference to document in D74 may not be correct. D74 references Xcel Energy Hazardous Materials Compliance Manual, Section 10 (page 28). (D93)  
[http://energysupply/envsvcs/ESXWaste/wastedocs/Waste\\_Manual.pdf](http://energysupply/envsvcs/ESXWaste/wastedocs/Waste_Manual.pdf), Waste Management Program Procedure/Waste Management Guidance Manual - Section 3.2 was provided reference for Xcel Energy Hazardous Materials Compliance Manual (D94)

Radiation Protection

A review of RP programs found a deficiency in the risk significance determination portion of the work management program. The conditions that determine high risk for work planning in PINGP 1680; Task Risk Screening Worksheet (now updated to QF 2010; Work Order Risk Screening Sheet) need to be adjusted to match management expectations.

**Conclusion:**

QF 2010 section Radiological Safety Screening for High Risk, requires adjustments for dose, dose rate, and contamination levels to meet management expectations.

Site

The Prairie Island work management improvement effort (PRIDE) determined that risk management at the station required improvement. FP-WM-IRM-01, "Integrated Risk Management" was developed to address this deficiency; the procedure was

approved on 5/8/2009. Station training was conducted on this process and all work order tasks are currently screened for risk (Nuclear, Industrial, Environmental, Radiological, and Corporate). In addition, the 2009 HU Improvement Plan - Risk Management was implemented at the beginning of 2009 to address risk management behaviors (CAP01177385).

### **Results of Extent of Cause Assessment:**

#### Conclusion for RC1:

The goal of the extent of cause assessment for RC1 was to determine if (program) procedures do not describe the methods required to successfully prepare and ship materials in accordance with applicable regulations and ensure management expectations for RP programs are incorporated into procedures.

The environment and equipment were determined to not be significant issues for this cause. The evaluation focused on people and processes but primarily focused on procedures. Six organizations were analyzed because they have processes that had same – similar correlations to the RMS: Security, Warehouse, Quality Assurance, Environmental, Chemistry, and Construction.

The review of RP programs found that the risk screening form did not contain the level of significance required by management expectations.

Overall, there were no significant conditions adverse to quality identified for extent of RC1. Four minor issues were identified and corrective actions have been initiated to address them.

#### Addendum

A Focused Self Assessment entitled *Transportation 95001 Inspection Preparation*, July 20 – July 24, 2009 concluded that the original EOC for RC1 was too narrowly focused. Therefore, additional evaluation of impacts to the site due to inadequate procedures and other written guidance was performed.

The evaluation included a review of all RCEs performed in the past 18 months ending 10/14/2009. 14 RCEs have been completed in the past 18 months. Including this one, 6 RCEs identify procedure quality (incomplete or unclear information or direction) as either the root cause or a contributing cause (3 each). In all cases, corrective actions were created and implemented to eliminate these issues per the CAP process. (D115)

DRUM reports, Department Excellence Plans, and Common Cause Evaluations covering the previous 18 months of performance in and Engineering, Operations, and Maintenance were reviewed for procedure quality issues. The Engineering Director, Operations Manager, and Maintenance Manager were consulted during the evaluation. Engineering documents did not indicate noteworthy issues with procedure quality. The Operations department has experienced issues with procedure

quality, specifically associated with reactivity management, operability determinations, verification and validation, and staffing. This issue has been captured in the Operations Department Excellence Plan for 2009 and tracked by CAP 01117762, 01117746, 01169711. There is an ongoing process to improve the detail in Maintenance procedures according to the Procedure Supervisor. (D115)

#### Conclusion for RC2:

The assessment for RC2 was built around the statement: 'the significance the site has assigned the (department) program does not align with the potential adverse consequences. This bounds the analysis of same to similar.

To assess whether the program has 'significance,' the related shipping evolution was reviewed to determine if there were adequate procedures, if the processes were covered under work management processes, and the numbers and qualifications of personnel associated with the program. Once an assessment of the significance of the program was completed, the risk associated with the program was assessed through interviews and by review of the site and fleet risk procedures. An extent of cause would be confirmed by the combination of a significant risk to the facility AND a failure to provide adequate procedures, personnel and processes to control that risk.

Of the programs reviewed, the Quality Assurance, Construction, and Warehouse groups provide services for other programs. These services are basic services that are controlled via the target program procedures. There were no conditions adverse to quality identified in these program groups.

Overall, there were no identified or potential significant conditions adverse to quality identified for extent of cause two.

The Chemistry, Environmental, and Security groups do have evolutions that are risk significant. These shipping evolutions are controlled by persons that are trained or qualified to perform these evolutions using established procedures. For the Chemistry group, these evolutions are usually controlled within the work control process.

The RP work management program did not have the proper level of risk identified for screening work as high risk. The site work management improvement effort implemented FP-WM-IRM-01 to address risk assessment deficiencies in work planning at the site. As review of the risk screening form (QF-2010) associated with FP-WM-IRM-01 indicated that additional improvements were necessary to incorporate the proper risk assessment for radioactive material shipments. A corrective action to update QF 2010 was initiated.

**IV. Previous Similar Events:**

AR00052837 (06/2001)

On 6/22/01 PINGP shipped 5 shipping containers of contaminated lead blankets to Kewaunee Nuclear power plant. Upon arrival the Rad Protection techs discovered one shipping container read 1.8 mrem/hr on contact instead of the <0.5 mrem/hr as initially surveyed at PINGP and as required per DOT classification. An investigation at Kewaunee found one lead blanket (in the shipping container in question) which had a fixed contact dose of 4-5

mrem/hr. The blanket(s) had shifted in transit. The corner of the shipping container which indicated 1.8 mrem/hr was the corner that the blanket with the contact reading of 4-5 mrem/hr was found. Kewaunee concluded that the blanket shifted in transit. Corrective actions included placing higher scrutiny on items >80% of DOT shipping limits, coaching workers on higher sensitivity to shifting items, more over-sight to the loading of "hot" equipment and utilizing a higher DOT classification if container is questionable.

This issue occurred in 2001. This issue was poorly evaluated as an ACE and actions assigned were not adequate to prevent recurrence. The corrective action program has been modified to be more robust since this issue has occurred, including a more robust ACE guide, qualifications for ACE report writing, and requirements for ACE grading through supervision. In addition, improvements to the corrective action program at PI since 2001 would ensure this previous issue would have been a root cause evaluation which would have produced recurrence control actions, instead of an ACE. None of the corrective actions stated in the ACE were incorporated into procedures. This was a missed opportunity to improve the RMSP.

AR01088559 (4/19/2007)

A box containing spare parts for reactivity computers that was supposed to be shipped to Point Beach in December 2006 could not be found. A thorough search of numerous site locations was conducted to locate the missing box. Point Beach was contacted, and they had no record of ever receiving the box. Couriers typically employed by the site were contacted and their records were reviewed with nothing relevant found. No further evaluation was conducted to determine how this box went missing, and no corrective actions were implemented to prevent it from happening again.

AR01138552 (5/22/2008)

Certain analyses for effluent releases are performed off-site. When samples were shipped to the vendor in May of 2008, the vendor reported that the box arrived crushed. This resulted in one of the samples being compromised. The RWSC stated that the samples and box were properly packaged and in good condition when they left the site. The damage to the box appears to have occurred when in the possession of the shipping company. Corrective action was to purchase a more robust shipping container.

AR01154944 (10/11/08)

During 2R25, a worker alarmed the portal monitor in the guardhouse as he was leaving for the day. Upon investigation he was found to have a 2600 ccpm particle on the outside of his right sock. It was believe to have come from the workers cloth shoe covers that he was wearing while working in the SFP area. Subsequent surveys of the SFP area, the dress out area, and the Westinghouse trailer (where the worker changed out of his modesty clothing) detected no further particles in any of the areas. The recommended solution to this issue was to no longer continue the use of cloth anti-contamination clothing.

AR01155971 (10/17/08)

A worker was working on sand plug installation during 2R25, had a 2800 ccpm particle on his forearm, below the elbow. The worker had been in the cavity to assist with sand plug installation and moving the old sand plugs that were previously wrapped from the north side of the SFP to the south side of the SFP. Actions taken after this event included decontamination of worker and surveys conducted in work area. Two particles were found during the survey, one at 600 ccpm and one at 5000 ccpm. Both particles were found on tools/equipment used in the job.

AR01158879 (11/12/08) **Note: This event occurred during the same outage and after the initial event.**

During a pre shipment survey of a trash sea land container, dose rates greater than those allowed for shipment were found. Contact dose rates of 220 mrem/hr were found on the bottom of the container which exceeds the 200 mrem/hr limit. This was found prior to the container leaving the RCA. It was determined that lack of oversight during rad waste loading activities contributed to this occurrence. Corrective actions for this issue include reloading of the sea land container and performance of another survey to ensure that all shipping limits are not exceeded.

In these cases, workers reacted to situations based on indicated initial parameters. Appropriate immediate and supplemental actions were taken to rectify the conditions.

In the above cases of discrete particles, many lower activity particles were found during outage 2R25. Corrective actions were effective to correct the condition. Discrete particles are routinely found in radiological areas during outages. None of the discrete particles were significant enough to warrant TEDE dose concerns.

## V. Operating Experience:

### o Internal Operating Experience-

A moderate number of similar shipping events have occurred within the industry (see Operating Experience), but an issue of similar potential significance has not occurred with a shipment from Prairie Island. A 2001 rad shipping issue of lesser significance is identified in the previous similar events section.

The following reviews are from significant events over the last 6 years. The areas that will be analyzed are:

- 1) a lack of oversight of radiation protection evolutions;
- 2) use of risk significance to establish requirements for supervisory oversight of radiological issues;
- 3) A lack of planning that could have prevented radiological issues from occurring.

#### **Lack of oversight of radiation protection evolutions:**

In the Radiological Protection (RP) department, a number of issues have been identified for which a lack of appropriate oversight was identified as the primary contributor:

- CR 20011095 SI 9-2 particle
- CAP 1075188 workers may have entered area without coverage
- CAP 1027384 moving a HRA gate during an evolution

These evolutions were either caused by or had a major contribution to the event from a lack of oversight of the radiation protection group during the process.

#### **Lack of risk significance process to determine proper supervisory oversight for radiological issues.**

There were several significant events in the radiological protection group that were either caused or had a major contribution to the event from a lack of supervisory oversight. The events are:

- RCE 1099775 HRA, LHRA, VHRA controls
- RCE 1114156 Sump C Key
- CAP 1032220 Improper locking of VHRA
- CAP 1083810 Key control

In each of these issues, the recurring theme is a lack of understanding of the significance of the actions being taken. In each of these cases, the use of risk based significance process to determine appropriate involvement would have ensured adequate direction to prevent the issue from occurring. Such controls were not in place. This is a significant issue and corrective actions implemented by this root cause analysis address risk assessment.

Additionally, there are supervisory oversight aspects that have been recently identified across the organization. There are a number of recent examples of issues resulting from lack of oversight (**including lack of vendor oversight**), including:

- o Portable diesel fire pump found with improper settings to support B.5.b strategies (vendor oversight)

- Turbine driven auxiliary feedwater pump bearing installation error.
- Neutron flux monitor Raychem splice installation errors.
- Control rod damaged during movement.

Although vendor oversight was identified as a causal factor in this root cause, it was not significant because it was determined the lack of oversight of the rad shipping group was the primary factor, not that vendors were involved.

**Lack of planning leading to radiological issues.**

A lack of planning has been identified at Prairie Island as a gap to Excellence. Generically, the work management process has been identified as a major deficiency. Several gaps have been identified and a project team (Work Management Initiative) is chartered to resolve these issues. From the perspective of radiation protection, a lack of planning, specifically ALARA planning, has been identified. Related to this issue are several CAPs that have identified inappropriate planning.

- CR 20011095 SI 9-2
- CAP 1027653 lack of fuel failure strategy
- CAP 1131673 resin sluice issues

In the last cap listed above, it was determined there were very few rad shipping evolutions carried in the work management process. Since the ALARA planning function is initiated as part of work order review, there is therefore very little planning associated with rad shipping. This has been identified as a separate issue (from the root cause charter) regarding lack of planning when removing the shipping canister lid from the spent fuel pool and was not evaluated here. There is ample evidence that there is a lack of ALARA planning for rad shipping evolutions and that the ALARA planning function at Prairie Island is minimal.

External OE

A search was performed on the INPO data base for industry events related to rad shipping discrepancies. There are many causes associated with radiological shipping deficiencies. The following is a summary of related industry events:

App.	OE	Date	Site	Description
X	IN 88-101	12/28/1988	various	Discrete particle moved, contaminated equipment moved.
X	OE5492	7/31/1992	Quad Cities	Inappropriate survey extent of Underwater Shear Cutter (USC)
	OE11870	1/31/2001	Peach Bottom 3	Neutron source shifted during shipping
	OE11952	2/28/2001	TMI 1	Sources improperly controlled during transport

App.	OE	Date	Site	Description
X	OE13815	5/20/2002	Ft Calhoun	DOT shipment with contact dose rate of 500 mrem/hr. Mop heads shifted in transit, incomplete survey.
	OE14892	10/28/2002	Clinton	Shipping container was contaminated.
	OE15728	3/13/2003	Nine Mile Point 2	Shipping container had a hole in it. Loads within container were not braced and had moved. No limits exceeded
X	OE 17136	10/23/2003	Nine Mile Point	55 gallon drums not surveyed on the bottom.
X	OE 17709	2/2/2004	LaSalle	Duratek shipped equipment at 200mrem/hr to LaSalle
	OE17741	2/6/2004	Duane Arnold	Cask received at DAEC in excess of DOT receipt contamination levels
X	OE 17831	2/23/2004	DC Cook	Vacuum cleaner debris was stored near edge of container that exceeded DOT shipping limits
	OE19437	11/3/2004	Davis Besse	Contamination on exterior of HICs
X	OE 20225	3/19/2005	Ft Calhoun	ICI cutter had high external to container dose limits but did NOT exceed DOT shipping criteria
	IN 05-10	4/13/2005	various	licensees changing the construction of boxes
	OE 21469	7/22/2005	Palisades	Resin sluiced to liner not rated for dose rates from resin.
X	OE23408	10/11/2006	Vermont Yankee and Susquehanna	Advance Crusher Shearer (ACS) shipped in excess of DOT limits due to discrete particle and small particle movement
X	OE 24029	12/8/2006	San Onofre and Fort Calhoun	Limited Quantity shipment in excess of 0.5 mrem/hr contact dose rates for shipment of lead blankets (max reading 3.4 mrem/hr).
X	OE 25642	8/22/2007	LaSalle and Barnwell	Discrete particle left in bottom of TN-RAM cask caused readings of 7 Rem/hr in the back of the cask.
X	OE 26644	3/3/2008	Watts Bar and AREVA	Ultrasonic fuel cleaning equipment was shipped with a contact dose reading in excess of DOT limits
X	OE27653	10/3/2008	Pilgrim and Vermont Yankee	Vermont Yankee received package that exceeded DOT limits due to shifting of contents

There are several recurring themes evident from the review of the external operating experience:

- Surveys to verify shipping requirements were met are not adequate prior to shipping.
- Materials used to handle irradiated items do not have adequate focus, oversight, or controls to ensure DOT shipping limits are met when the equipment is shipped.
- The RMSP of any site is responsible for ensuring the contents of the container are adequately restrained to prevent movement or redistribution of activity within a container during normal shipping evolutions.
- Shipping containers used to ship materials with risk significant activity must be designed and loaded to minimize the potential for exceeding DOT limits.
- There are three generic ways DOT limits are exceeded during shipping evolutions: the equipment, shielding, or a discrete particle shift during transport.
- Procedures are generally not robust enough to prevent rad shipping issues.

These points from industry OE were used to evaluate for potential issues for this evaluation at Prairie Island.

As part of this evaluation, the OE program was reviewed to determine if the program is effective. In accordance with the OE Program guidance, OE items can be dispositioned by distributing for information only, evaluation required, training request, or no action required.

The OE items distributed to Radiation Protection during the period from 1/1/2007 to 12/31/2008 included INPO Operating Experience (OE) reports, Significant Event Notifications (SEN), Significant Event Reports (SER), Operating Experience Digests (OED), and Radiological Protection Digest. During this period 207 OE items were distributed Radiation Protection. During this same time period 46 OE items were evaluated by Radiation Protection.

There were numerous opportunities following the release of IN 88-101 (Shipment of Contaminated Equipment between Nuclear Power Stations) for the site to respond to industry trends associated with radiological material shipments containing discrete particles. For example, in the five year period prior to the subject event, each of the applicable OEs listed below was distributed to site RP personnel for review:

OE #	Date	Site	Description
OE17709	2/2/2004	LaSalle	Duratek shipped equipment at 200mrem/hr to LaSalle
OE17831	2/23/2004	DC Cook	Vacuum cleaner debris was stored near edge of container that exceeded DOT shipping limits
OE21469	7/22/2005	Palisades	Resin sluiced to liner not rated for dose rates from resin.
OE23408	10/11/2006	Vermont Yankee and Susquehanna	Advance Crusher Shearer (ACS) shipped in excess of DOT limits due to discrete particle and small particle movement

OE #	Date	Site	Description
OE24029	12/8/2006	San Onofre and Fort Calhoun	Limited Quantity shipment in excess of 0.5 mrem/hr contact dose rates for shipment of lead blankets (max reading 3.4 mrem/hr.
OE25642	8/22/2007	LaSalle and Barnwell	Discrete particle left in bottom of TN-RAM cask caused readings of 7 Rem/hr in the back of the cask.
OE26644	3/3/2008	Watts Bar and AREVA	Ultrasonic fuel cleaning equipment was shipped with a contact dose reading in excess of DOT limits
OE27653	10/3/2008	Pilgrim and Vermont Yankee	Vermont Yankee received package that exceeded DOT limits due to shifting of contents (OE not received until after 10/30/08)

These articles were distributed for information only and were not formally evaluated.

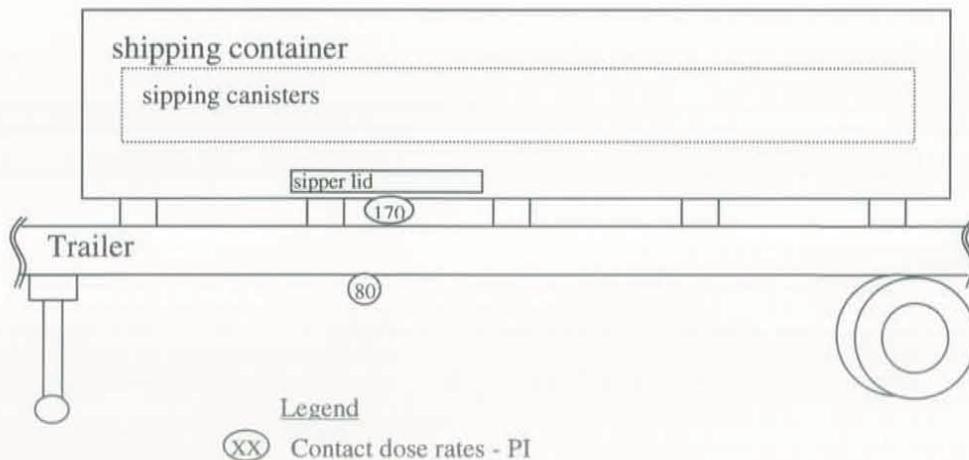
The RMSP was evaluated for how Operating Experience was dispositioned over a five year period. The results are shown in the table above. The evaluation of the operating experience was found to be unsatisfactory for the RMSP. As extent of condition, the Operating Experience for the Radiation Protection and Chemistry department was evaluated for a two year period. A total of 56 OE evaluations were performed from 10/1/06 to 10/1/08. Pursuant to the evaluations, actions were initiated to enhance or alter plant practices in 15 cases, recommendations for enhancements in 3 cases and no actions necessary in 38 cases (OE did not apply or the corrective actions were already contained in plant procedures/practices). Based on this review, the disposition of operating experience for the radiation protection and chemistry department (other than the RMSP) was found to be satisfactory.

**VI. Radiological Safety Significance**

In this event, a discrete particle was embedded in a vacuum canister lid rigging cable where it was not initially detected. In addition, the cables were oriented such that transport surveys did not reveal the discrete particle. This equipment shifted after leaving Prairie Island and before the shipping container was surveyed at Waltz Mill. When the receipt survey was conducted by Waltz Mill personnel, maximum contact dose rate readings on the external of the shipping container had increased from 170 mrem/hr as measured at Prairie Island to 1630 mrem/hr. This maximum contact reading was located on the bottom of the container, and was identified when the container was lifted off the trailer inside the radiologically controlled area at Waltz Mill.

Subsequent investigation determined the elevated contact readings were the result of a discrete particle fixed to a coated cable in the shipment. The cable containing the discrete particle was a part of a bundle of cables that had shifted during shipment, positioning the area of the cable where the discrete particle was located near the bottom of the shipping container. Contact dose rates with the bottom of the trailer as found at Waltz Mill were 80 mrem/hr, and similar to the trailer bottom maximum contact reading from the Prairie Island pre-transport survey. This value was within acceptable limits when the tractor and trailer were initially surveyed on arrival at Waltz Mill, and met DOT vehicle dose rate requirements.

Trailer Configuration and Dose Rates



The location of the elevated radiation levels on the bottom of the box restricted exposure to the general public to radiation levels in excess of regulatory limits during transportation between Prairie Island and Waltz Mill. The shipping container was not repositioned on the trailer or removed while in transit and the trailer was an exclusive use shipment to the Waltz Mill, PA site. The truck was stopped for a maximum total of 5.75

hours during the trip. It is highly improbable that any member of the public could gain access to that location, assuming normal conditions of transport, because no member of the public could have reasonably located a portion of their whole body between the container and the trailer without moving the container. The shifting of the contents repositioned the dose producing discrete particle to the bottom of the container at a location that was not readily accessible for whole body dose.

The elevated dose on the bottom of the container, and subsequently the dose producing discrete particle was found during the entry surveys at Waltz Mill. Waltz Mill has an established radioactive material program with multiple barriers to prevent workers from being exposed to the dose from the discrete particle. The shipping documentation survey prompted a thorough receipt survey which alerted the workers at Waltz Mill of the discrete particle dose concern.

For radiation workers handling the package, the choice of open versus closed transport is not significant because the personnel handling the container would need access to the container whether it was open or closed transport.

In consideration of dose to the general public, the use of closed transport would have been an additional barrier to prevent undue exposure.

#### Potential Safety Significance – Other Possible Configurations

Note: Thirty centimeters (i.e., one foot) is the regulatory standard for measuring whole body exposure rates (per 10CFR 20.1003), and whole body exposure is the quantity of interest for radiological risk.

Under worst case conditions, shifting of the material within the container could have resulted in the discrete particle coming in contact with an exposed, accessible portion of the container and producing a dose rate for potential public exposure. The highest dose rate thirty centimeters from the 1630 mrem/hr contact reading on the container was 89 mrem/hr measured with an E-600 instrument. This spot was characterized by Waltz Mill as "very small". In addition, the maximum two meter reading from the transport read 0.5 mrem/hr. During the investigation, characterization of the particle (apart from other radioactive material in the box) showed maximum dose rates of thirty mrem/hr at thirty centimeters. Therefore, 89 mrem/hr at 30 centimeters will be conservatively applied as the maximum potential whole body dose rate possible if the particle along with other material in the box relocated to an accessible location on the container.

A dose rate of about 89 mrem/hr at thirty centimeters from all surfaces of a package that is shipped in accordance with DOT requirements is possible. For consideration of possible dose rates from a legal shipment, a 55 gallon drum with a composite density of 2.35 g/cc and with an activity of 93.5 millicuries of Co-60 will yield calculated dose rates of 200 mrem/hr on contact, 88 mrem/hr at thirty centimeters from the side, and six mrem/hr at two meters. Therefore, whole body dose rates on legal shipments can pose

larger exposure risks to the general public than this actual shipment or the postulated case where the particle is located in an accessible area.

The highest contact dose rate of 1630 mrem/hr is about eight times higher than allowed by DOT regulation. Radiation workers involved in a post accident response, or in handling of the container upon receipt of the shipment, are adequately trained and equipped to handle a shipment of this type.

The choice of open versus closed transport in the analysis of potential exposure is significant for consideration of exposure to the general public because a closed transport would have provided a sufficient barrier to prevent exposure of the public to dose rates in excess of 49 CFR limits on contact with the package. Personnel handling the container would have access to the container whether the truck was open or closed transport.

### Conclusions

In the actual event, the dose potential was limited to areas on the bottom of the container at a location that was not readily accessible for whole body dose; therefore, it is highly improbable that any member of the public could gain access to that location, assuming normal conditions of transport. The possibility that a member of the public received a whole body dose above a small fraction of the regulatory limit of 25 mrem (40CFR190) is minimal.

Prairie Island realizes that the following potentials may have existed under worst case circumstances:

1. A potential existed for the material to re-locate to an accessible location on the container.
2. In this configuration, the potential whole body dose rate is bounded by the dose rates that are possible on legal shipments. Therefore, the potential that a member of the public would have received a radiation dose above the doses that are normally incident to transportation of radioactive material is minimal.
3. Waltz Mill has adequately trained personnel to prevent workers from being exposed to the dose from the discrete particle. The shipping documentation survey was adequate to alert the workers at Waltz Mill of the discrete particle and prompt a thorough receipt survey.
4. The public relies on the licensee to safely package radioactive materials. This event could have resulted in a significant erosion of public trust.

### **Evaluation of Safety Culture Impacts**

As part of this evaluation, safety culture impacts were assessed per QF-0436 (Attachment 7). The following significant issues were identified:

- **HU – (H.1) Decision Making** – The site did not have a method for determining risk significance of events related to shipping of radioactive material. Assumptions regarding the adequacy of the radiation survey and container packing technique were not conservative. When the original equipment survey indicated 120 mrem/hr, and the subsequent container survey indicated 170 mrem/hr, the opportunity to validate the integrity of the packaging was missed.
- **HU – (H.2) Resources** – Procedures are not adequate. Training is required for RP technicians performing RMSP work. A qualification program will be implemented.
- **HU – (H.3) Work Control** – RMSP activities are usually completed outside of the work management process. Shipping tasks and the risks associated with shipping are frequently not addressed in work packages. RP technicians providing job coverage for decontamination are not aware of rad waste shipping requirements with respect to discrete particle issues.
- **HU – (H.4) Work Practices** – Inadequate oversight (RMSP and supervisors) during packaging, surveying and crating evolutions. Some of the behaviors that contributed to this event do not support excellence in human performance.
- **PI&R – (P.2) Operating Experience** – OE is reviewed but some issues identified in OE are not evaluated nor are corrective actions properly implemented. Relevant changes to station processes, procedures, equipment and training programs are not effectively implemented.
- **PI&R – (P.3) Self-Assessment** - Assessments are only included as part of the overall RP program itself. The RMSP needs a separate requirement for assessments, based on program risk exposure, in order to be more self-critical.
- **OTH – (O.2) Continuous Learning Environment** – Adequate training has not been provided to ensure personnel performing RMSP duties have the required technical competency.

### **Safety Conscious Work Environment (SCWE)**

A review of Safety Culture Impacts was completed using QF-0436 (Attachment 7). There were no SCWE issues identified as part of this evaluation. There was no evidence of employees not raising safety concerns relevant to this event. There was no evidence of a chilled environment that might preclude workers from raising safety concerns related to rad shipments. This was concluded based on the results of interviews conducted as a part of this evaluation.

The root cause has identified and assigned corrective actions for the safety culture issues identified above. For extent of condition evaluation of these issues, CAP 1161675 has been written and submitted to CAP screening for evaluation and assignment.

**VII. Reports to External Agencies & the NSPM Sites**

Per 10 CFR 20.1906(d) (2), the reporting responsibility for a shipping event lies with the receiver of the shipment. In this case, the Westinghouse Radiation Safety Officer notified the State of Pennsylvania Department of Environmental Protection (PADEP) and Southern Pines Trucking in accordance with 25 CFR 219.5 and 219.6 (Pennsylvania statutes), which incorporate 10 CFR 20.1906(d). Informal communication with NRC Region III and the Resident Inspectors was also conducted.

An internal Operating Experience report was filed (11/11/2008) as part of this event. A nuclear network message was promulgated via GAR 01158434.