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**AR Number: 00907846**

<b>Aff Fac:</b>	Oyster Creek	<b>AR Type:</b>	CR	<b>Status:</b>	APPROVED
<b>Aff Unit:</b>	NA	<b>Owed To:</b>	A5351CAP	<b>Due Date:</b>	08/20/2009
<b>Aff System:</b>	--			<b>Event Date:</b>	04/15/2009
<b>CR Level/Class:</b>	3/A			<b>Disc Date:</b>	04/15/2009
<b>How Discovered:</b>	H02			<b>Orig Date:</b>	04/15/2009

**Action Request Details****Subject:** TRITIUM IDENTIFIED IN ESW VAULT**Description:** Originator: MATTHEW J NIXON Supv Contacted: Jhansi Kandasamy**Condition Description:**

In preparation for work inside the Emergency Service Water vault, water found inside the vault was pumped into drums and sampled for gamma emitters, tritium, and pH. There were no gamma emitters identified, pH was 7.62 and tritium was 102,000 pCi/l. The reporting threshold to the New Jersey DEP for tritium is 2,000 pCi/l.

**Immediate actions taken:**

The New Jersey DEP was notified of the sample results and a potential release of tritium to the soil. It was also iterated that the water was contained in a concrete vault and being pumped into drums. A prompt investigation (PINV) was initiated. Additional samples were obtained for tritium analysis - drum of original water from vault, drum of current water being transferred from vault, and a sample from the vault. Normandeau Associates were contacted to pick up duplicate samples for analysis by Teledyne Brown Engineering.

**Recommended Actions:**

Complete PINV. Identify potential sources.

**What activities, processes, or procedures were involved?**

Sampling of vault water prior to discharge.

**Why did the condition happen?**

Unkown

**What are the consequences?**

Reported to New Jersey DEP as potential reportable release.

**Were any procedural requirements impacted?**

N/A

**Were there any adverse physical conditions?**

Unkown

**List of knowledgeable individuals:**

Jhansi Kandasamy  
Leanne Birkmire  
Matt Nixon  
Jay Vouglitios

**Repeat or similar condition?**

No

**Operable Basis:**

*FLM*

N/A

Reportable Basis:

OP-AA-106-101 notifications were made to NJ Dept of Env Prot, ENS  
notifications made to NRC, PINV

Reviewed by: HERBERT G TRITT II 04/16/2009 04:18:16 CDT

Reviewer Comments:  
none

SOC Reviewed by: THOMAS S LONSDALE 04/21/2009 09:18:46 CDT

SOC Comments:  
CONDENSATE TRANSFER WATER SYSTEM-11,CH

04/17/09 SOC: Follow-up Chemistry

4/20/09 TAP - Significance level 3 due to Contamination above normal  
levels resulting from unplanned events.

4/21/09 RCL: Environmental keyword added. PINV complete. Sig 3 due to  
contamination above normal levels resulting from unplanned events.  
Complex troubleshooting action plan (CTSAP) in progress and assigned. Risk  
High - Uncertainty Med, engineering will per a Root Cause Evaluations,  
Class A. Close to Root Cause assignments made, PINV, CTSAP, and PIMS AR  
A2222268 pulled through.

<b>Assign #: 01</b>		<b>AR #: 00907846</b>			
<b>Aff Fac:</b>	Oyster Creek	<b>Assign Type:</b>	TRKG	<b>Status:</b>	COMPLETE
<b>Priority:</b>		<b>Assigned To:</b>		<b>Due Date:</b>	04/20/2009
<b>Schedule Ref:</b>		<b>Prim Grp:</b>	ACAPALL	<b>Orig Due Date:</b>	
<b>Unit Condition:</b>		<b>Sec Grp:</b>			
<b>Assignment Details</b>					
<b>Subject/Description:</b>	TRITIUM IDENTIFIED IN ESW VAULT				
<b>Assignment Completion</b>					
<b>In Progress Notes:</b>					
<b>Completion Notes:</b>					

**Assign #: 02****AR #: 00907846**

<b>Aff Fac:</b> Oyster Creek	<b>Assign Type:</b> PINV	<b>Status:</b> COMPLETE
<b>Priority:</b>	<b>Assigned To:</b> U000PO3	<b>Due Date:</b> 04/20/2009
<b>Schedule Ref:</b>	<b>Prim Grp:</b> A5332CHEM	<b>Orig Due Date:</b> 04/20/2009
<b>Unit Condition:</b>	<b>Sec Grp:</b>	

**Assignment Details****Subject/Description:** Perform PINV following Management approval, submit to NDO Mailbox and NRC Resident.**Assignment Completion****In Progress Notes:**

ATTACHMENT 2  
Event / Issues Report Format  
Equipment Issue

1. State the problem that is being reported and provide the CR/IR number:

Tritium levels greater than 2,000 pCi/l identified in water pumped out of a concrete vault containing Emergency Service Water (ESW) cables, which were being replaced. The IR# is 907846.

2. Brief Description of Equipment and Event / Issue

Outside vaults and pipe chases are sampled for gamma emitters, tritium and pH prior to discharge to the ground. The cable work scheduled for the workweek-required entrance into the vault. The manhole was opened and water was discovered. The water was pumped into 55-gallon drums and sampled. There were no gamma emitters identified, pH was 7.62 and tritium was 102,000 pCi/l.

The Minimum Detectable Activity (MDA) for on-site tritium analysis is 2,000 pCi/l. This is the Lower Limit of Detection (LLD) listed in the Oyster Creek Offsite Dose Calculation Manual (ODCM) and is the value used, as the reporting threshold for notification to the New Jersey Department of Environmental Protection (NJDEP) for release of tritium.

Since water was observed entering the vault, it was conservatively decided that water could be exiting the vault. Based on the tritium levels in the vault, it was determined that a notification be reported to the NJDEP hotline, due to a prior agreement made with the state. This notification was made six minutes after the sample analysis results were received. There are a total of 31 conduits that enter or exit the vault.

3. Pertinent Equipment History Information

This vault was inspected on September 29th as part of the License Renewal inspections and water was tested for Tritium with less than detectable levels.

4. Any PCM, PM, Last Worked, OPEX (internal or external), etc issues

As part of the License Renewal program, this vault is inspected every 90 days.

5. Extent of Condition

PMs exist to perform inspections of underground manholes and if water is found, then sampled. The previous records show that there were no detectable levels of Tritium in manholes inspected in September of 2009. Additional reviews are in progress.

#### 6. Current Status (including risks / concerns)

Continuing to pump rainwater from the vault into 55-gallon drums. Additional samples obtained from the ESW vault, a sample from the original water pumped from the vault, and a sample from the rainwater being pumped out at the time of sampling. Sample results are expected to be available at 1000, 4/16/09.

Normandeau Associates have been contacted to pick up duplicate samples for shipping to Teledyne Brown Engineering for analysis.

Samples obtained between March 10 and March 12, 2009, as part of the Radiological Groundwater Protection Program (RGPP), were all less than the LLD of 200 pCi/l.

#### 7. Follow-up Actions Planned

Evaluate all inputs into and from the ESW vault for potential sources of tritium.

Inspect other vaults in the vicinity and sample for tritium as warranted.

Have our contractor (Normandeau Associates) collect water samples from the following locations:

? Monitoring wells in the general vicinity of the cable vault - W-3, W-4, W-5, W-6 and MW-15K-1A. These wells were sampled during the March 10-12, 2009 period. The results of tritium analyses on those samples were all < 200 pCi/L

? Lysimeter in the vicinity of the cable vault - CST-9. This lysimeter was sampled on March 11, 2009 and the tritium concentration was < 200 pCi/L.

? Lysimeter on the southwest corner of the Condensate Storage Tank - CST-2. This lysimeter was last sampled in August of 2006 when the tritium concentration was found to be < 200 pCi/L.

? Surface water sample from the main condenser discharge. This is not a routine sampling point.

The samples will be shipped to Teledyne Brown Engineering to be analyzed for tritium, strontium-90 and gamma emitting radionuclides utilizing the LLDs specified for the Radiological Groundwater Protection Program.

#### 8. Any Assistance Needed

Issues management team assembled for communications and issue resolution.

#### Completion Notes: