

Revision 6 - BNP Action Plan for Tritium in Groundwater

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1.1 Section 1 - Define Problem and Expected Results

Tritium was discovered in manholes MW-5 and MW-6. Manholes MW-5 and MW-6 are in the vicinity of the meteorological tower and the Storm Drain Stabilization Pond (SDSP). Further investigations indicated that groundwater containing tritium was leaking into the manholes. Additional reviews indicated that there was standing water on the outside area of the SDSP flowing into the intake canal and along the ditch in the area of Air Sampler 201 also flowing into the canal.

1.2 Section 2 - Current Facts and Assumptions

Groundwater containing tritium was identified weeping into manhole MW-5 and MW-6. Tritium concentrations were approximately 130,000 pCi/L and 200,000 pCi/L respectively. Standing/flowing water containing tritium was found on the south side area outside of the SDSP dike at ranges of approximately 300,00 pCi/L to 800,000 pCi/L. Water containing tritium was found on the east side area outside of the dike in a drainage ditch of approximately 50,000 pCi/L. The current assumptions are that the water is seeping under/through the area. Both areas are flowing water containing tritium to the discharge canal the areas are being sampled daily with daily flow rate measurements and effluent accountability measures are in place to properly account for the release. Samples have been obtained from Nancy's Creek and were found to be non-detectable at approximately 2500 pCi/L. Samples of water from Nancy's Creek have been sent to HEEC for analyses at a lower detection level.

1.3 Section 3 - Extent of condition

The extent of condition is still under investigation. Hydrologists have been contacted, visited the site, and are preparing proposals to install wells to monitor the area groundwater. Existing wells (onsite) have been sampled and analyses are in progress. A well at the Biology Laboratory has been analyzed and found to have no detectable tritium. Other well samples are at the HEEC for analysis.

Temporary measures are being evaluated to terminate the release and return the water back to the SDSP.

1.4 Section 4 - Review Applicable Operating Experience (OE)

Review identified the following OE that related to the BNP issue.

OE21833 - Preliminary - Offsite Releases of Tritium at Braidwood Station

PNO-III-06-004A - Tritium in Groundwater at Byron Nuclear Generating Station

USNRC- Plant Sites with Groundwater Contamination - Indian Point Callaway, Dresden, and Palo Verde

W-2

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1.5 Section 5 - Define Needed Resources

Maintenance

- Provide support for clearing areas for well drilling and outside dike inspections

Operations

- None at this time

Chemistry

- Serve as team leaders for investigations, determining extent of condition, and analyses.
- Work with hydrologists to collect data, evaluate results, and develop conceptual site model.

Design Engineering

- None at this time

System Engineering

- Serve as team members for determining extent of condition and SDSP repair resolution.

On-Line Scheduling

- Support scheduling of activities required to investigate and correct problem.

1.6 Section 6 - Define the Nuclear or Personnel Safety Impact of the Problem (if applicable)

None

Section 7 - Action Plan:

Note: The following actions can be performed in any order.

	Activity	Resp. Group and Person	Expected Finish
1	Perform problem analysis using fault tree analysis method.	Investigation Team - Millinor	5/25/07
2	Determine if a 30 day report in accordance with ORCI-6.1 is required.	Regulatory Affairs-Lee Grzeck	5/25/07
3	Work with hydrologists to install monitoring wells, collect data, evaluate results, and develop conceptual site model.	E&RC -McGowan	6/29/07
4	Perform additional sampling, as needed, of existing areas and newly discovered areas potentially containing tritium.	E&RC -McGowan	6/29/07
5	Work with Maintenance personnel to ensure contracts to install equipment to divert release flows back to SDSP are in place.	E&RC -McGowan	5/25/07
6	Work with Maintenance personnel to ensure contracts including appropriate permits to clear areas around outside of dike to determine the extent of condition are developed.	E&RC -McGowan	6/29/07
7	Perform additional sampling of Nancy's Creek and other appropriate areas to determine the extent of condition for tritium migration.	E&RC -McGowan	5/25/07
8	Investigate and sample as appropriate offsite wells to determine the extent of condition for tritium migration.	E&RC -McGowan	5/25/07
9	Determine what offsite residential/municipal wells are near the plant site	E&RC -McGowan	6/29/07

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	Activity	Resp. Group and Person	Expected Finish
10	Sample as appropriate any near site residential wells	E&RC -McGowan	8/23/07
11	Perform additional sampling of all wet areas around the SDSP that have not been previously sampled to determine extent of condition	E&RC -McGowan	6/1/07
12	Resolve issues with manhole MW-5 automatic sump that pumps to ground	E&RC/BESS – Millinor/Souther	6/1/07
13	Determine appropriate radiological controls to be utilized for personnel working with tritiated water.	E&RC -McClendon	5/25/07
14	Determine impact to Independent Fuel Storage Project	E&RC -McClendon	6/15/07
15	Review the Radiological Environmental Monitoring Program (REMP) requirements as indicated in the Branch Technical Position to determine if the existing REMP program is adequate to address the current issue with the SDSP.	E&RC-Millinor	6/15/07
16	Evaluate potential airborne releases from the SDSP due to evaporation	E&RC-Millinor	7/13/07
17	Define all manholes on site and sample the manholes that have not been sampled and analyzed since 5/1/06.	E&RC/BESS – Millinor/Souther	8/23/07

Generic Considerations

As part of the plan development, consider the following items that may pertain to your plan:

1. Schedule impact – are there activities that need to be inserted into the schedule? What is the recommended time for implementation? If appropriate assign action to O&S for schedule evaluation and changes.
2. Will procedure changes be required?
3. Is an EC required?
4. Do WO's need to be developed and planned?
5. Is funding required to implement plan?
6. Does this impact the other Unit?
7. What resources will be required to support implementation?

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