## NRR-PMDAPEm Resource

**From:** Wall, Scott
**Sent:** Thursday, December 11, 2014 11:35 AM
**To:** Anderson, Jon S.
**Cc:** Vincent, Dale M.; Shoop, Undine; Pelton, David; Beltz, Terry; Bucholtz, Kristy
**Subject:** Prairie Island Nuclear Generating Plant, Units 1 and 2 - Requests for Additional Information re: Licensing Basis for Waste Gas Tank Rupture Dose Analysis [MF4680 and MF4681]
**Attachments:** Prairie Island- RAIs for LAR Regarding Licensing Basis for Waste Gas Tank Rupture Dose Analysis (MF4680 and MF4681).pdf

Mr. Anderson

By letter dated August 21, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14233A431), Northern States Power Company (NSPM), a Minnesota Corporation, submitted a license amendment request for Prairie Island Nuclear Generating Plant (PINGP), Units 1 and 2. The proposed amendment would revise the licensing basis analysis for waste gas decay tank rupture to include 60 years of plant operation.

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the information provided by NSPM and has determined that additional information is needed to complete the review. On December 8, 2014, the NRC staff forwarded, via an electronic mail, a draft of the requests for additional information (RAIs) to the NSPM staff. The attachment to this electronic mail contains the finalized RAIs. On December 10, 2014, your staff agreed to response to the finalized RAIs no later than February 9, 2015.

Please note that review efforts on this task are being continued and further RAIs may develop.

Finally, please don't hesitate to contact me if you have any additional questions or concerns.

Sincerely,

**Scott P. Wall, PMP®, LSS BB, BSP**
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**From:** Wall, Scott

**Created By:** Scott.Wall@nrc.gov

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REQUEST FOR ADDITIONAL INFORMATION

LICENSE AMENDMENT REQUEST TO REVISE UPDATED FINAL SAFETY ANALYSIS

REPORT FOR A WASTE GAS DECAY TANK RUPTURE

NORTHERN STATES POWER COMPANY

PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2

DOCKET NOS. 50-282 AND 50-306

By letter dated August 21, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14233A431), Northern States Power Company (NSPM, the licensee), doing business as Xcel Energy, submitted a license amendment request (LAR) for Prairie Island Nuclear Generating Plant (PINGP), Units 1 and 2. The proposed LAR would revise PINGP Updated Safety Analysis Report (USAR) for waste gas decay tank rupture to include 60 years of plant operation. The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the information provided by NSPM and has determined that additional information is needed to complete the review, as described in the attached request for additional information (RAIs).

**ARCB-RAI-1**

In application dated August 21, 2014, it stated:

> In the updated analysis, the activity in a gas decay tank is taken to be the maximum amount that could accumulate over the plant lifetime (60 years) from operation with one percent of the rated core thermal power being generated by rods with clad defects. For all isotopes except Kr-85, the postulated amount of activity is taken to be one reactor coolant system equilibrium cycle inventory. The Kr-85 inventory represents the activity at the end of a 60 year plant life.

On page 9.1-2 in PINGP USAR section 9 it states, "…the waste disposal system is common to Units 1 and 2."

The waste gas decay tank radionuclide inventory presented in USAR, Table D.7-1 is used as an input to the waste gas decay tank rupture dose analysis, along with an update of Kr-85 to reflect the radioactivity at the end of the 60-year plant life. Explain if USAR, Table D.7-1, including the update of Kr-85 to reflect the radioactivity at the end of the 60-year plant life, reflects the input from both PINGP units 1 and 2 into the waste gas decay tank since the tank is common and receives input from units 1 and 2.

**ARCB-RAI-2**

PINGP Technical Specifications (TS) 5.5.10, "Explosive Gas and Storage Tank Radioactivity Monitoring Program," states,

> This program provides controls for potentially explosive gas mixtures contained in the waste gas holdup system, the quantity of radioactivity contained in gas storage tanks, and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks.
>
> The program shall include:
>
> a…
>
> b. A surveillance program to ensure that the quantity of radioactivity contained in each gas storage tank is less than or equal to 78,800 Curies of noble gas (considered as dose equivalent Xe-133); …

TS 5.5.10 limits the waste gas decay tank quantity of radioactivity as stated above. Provide the basis for the TS Waste Gas Decay Tank Curie limit, include the dose criteria used to establish the dose equivalent Xe-133 limit of 78,800 curies, and explain how the limit is accounted for in the waste gas decay tank rupture dose analysis.

**ARCB-RAI-3**

On page 12 of 13 in the Waste Gas Decay Tank Rupture Dose Analysis Calculation the tables show that EAB "Total Gamma + Beta Dose" are 4.32E+00 and the LPZ "Total Gamma + Beta Dose" is 1.18E+00.

What is the technical basis for adding the Beta Skin Dose to the Whole Body Gamma Dose?

**ARCB-RAI-4**

Given that the only change in the projected Waste Gas Decay Tank inventory is the increase in Kr-85, and given that Kr-85 is a low energy Beta emitter; please explain the impact of the additional Kr-85 inventory on the Waste Gas Decay Tank TS Dose Equivalent Xe-133 limit of 78,800 curies.