# NorthAnnaRAIsPEm Resource

From:	Buckberg, Perry
Sent:	Monday, October 20, 2014 8:52 AM
То:	'na3raidommailbox@dom.com' (na3raidommailbox@dom.com)
	(na3raidommailbox@dom.com)
Cc:	Patel, Chandu; NorthAnnaRAIsPEm Resource; Hinson, Charles; McCoppin, Michael;
	Williams, Stephen
Subject:	Draft North Anna 3 RAIs - Chapters 11
Attachments:	Draft RAI 7691 10-20-14.docx; Draft RAI 7692 10-20-14.docx; Draft RAI 7697
	10-20-14.docx; Draft RAI_7689 10-20-14.docx

Hello,

Please see attached draft Chapter 11 RAIs 7689, 7991, 7692 and 7697 for the North Anna 3 COLA. Please let me know if you need clarification on these draft RAIs by CoB October 23, 2014.

Thanks,

## Perry Buckberg Senior Project Manager

Senior Project Manager phone: (301)415-1383 fax: (301)415-6406 perry.buckberg@nrc.gov U.S. Nuclear Regulatory Commission

Office of New Reactors Mail Stop T-06D38M Washington, DC, 20555-0001

Hearing Identifier:	NorthAnna3_eRAI
Email Number:	58

Mail Envelope Properties (44CD2E65B0FF0E499CB32BC30CF781F0017C5E138D67)

11

Subject:	Draft North Anna 3 RAIs - Chapters
Sent Date:	10/20/2014 8:51:54 AM
Received Date:	10/20/2014 8:52:02 AM
From:	Buckberg, Perry

Created By: Perry.Buckberg@nrc.gov

#### **Recipients:**

"Patel, Chandu" <Chandu.Patel@nrc.gov> Tracking Status: None "NorthAnnaRAIsPEm Resource" <NorthAnnaRAIsPEm.Resource@nrc.gov> Tracking Status: None "Hinson, Charles" <Charles.Hinson@nrc.gov> Tracking Status: None "McCoppin, Michael" <Michael.McCoppin@nrc.gov> Tracking Status: None "Williams, Stephen" <Stephen.Williams@nrc.gov> Tracking Status: None "Williams, Stephen" <Stephen.Williams@nrc.gov> Tracking Status: None "na3raidommailbox@dom.com' (na3raidommailbox@dom.com) (na3raidommailbox@dom.com)" <na3raidommailbox@dom.com> Tracking Status: None

#### Post Office: HQCLSTR01.nrc.gov

١M
!

Options	
Priority:	Standard
Return Notification:	No
Reply Requested:	No
Sensitivity:	Normal
Expiration Date:	
Recipients Received:	

Issue Date: 10/20/2014 Application Title: North Anna, Unit 3 - Docket Number 52-017 Operating Company: Dominion Docket No. 52-017 Review Section: 11.02 - Liquid Waste Management System Application Section: 11.2.2

### **QUESTION:**

The technical review of the liquid waste management system (LWMS) per the SRP 11.2 includes the design, design objectives, design criteria, methods of treatment, expected releases, and calculation methods and principal parameters used in calculating effluent source terms and releases of radioactive materials in liquid effluents, including system piping and instrumentation diagrams (P&IDs) and process flow diagrams showing methods of operation and factors that influence waste treatment, e.g., system interfaces and potential bypass routes to non-radioactive systems.

Please describe in FSAR Section 11.2.2 the process flow diagrams with process equipment, flow data, tank batch capabilities, and key control instrumentation provided to indicate process design, method of operation, and release monitoring for the site specific LWMS. Describe the LWMS piping segments and design features. Please describe any leak detection monitoring and notification included in this system. Ensure that the Offsite Dose Calculation Manual and supporting procedures require appropriate actions to prevent an unmonitored release.Please address these items and provide a mark-up for the proposed FSAR changes.

Note: See Section 11.2.2, System Description of Revision 5, March 2012, North Anna 3, COL US-APWR.

Issue Date: 10/20/2014 Application Title: North Anna, Unit 3 - Docket Number 52-017 Operating Company: Dominion Docket No. 52-017 Review Section: 11.02 - Liquid Waste Management System Application Section: 11.2.1.6

#### **QUESTION:**

Per RG 4.21, potentially radioactive lines in temporary and/or mobile systems should have selfsealing quick disconnects as well as a means to promptly isolate leaks. These systems should incorporate operational interlocks to minimize the possibility of leakage and contamination. Designs should ensure that spills and leaks from skid-mounted systems will be contained and routed to radioactive waste drains.

Based on this requirement, the staff suggests that a bulleted item, consistent with the following, be included in FSAR Section 11.2.1.

 Mobile or Temporary Equipment - Process piping connections have connectors different from the utility connectors to prevent cross-connection and contamination. The use of mobile or temporary equipment requires applicable regulatory requirements and guidance such as 10 CFR 50.34a, 10 CFR 20.1406, RG 4.21 and RG 1.143 to be addressed. As such, the purchase or lease contracts for any temporary and mobile equipment will specify the applicable criteria.

Issue Date: 10/20/2014 Application Title: North Anna, Unit 3 - Docket Number 52-017 Operating Company: Dominion Docket No. 52-017 Review Section: 11.02 - Liquid Waste Management System Application Section: 11.2.3.2

### **QUESTION:**

The review of the impacts of an accidental release of radioactive liquids in groundwater or surface water and effects on existing users or likely future users of groundwater or surface water resources is performed using the guidance in SRP Sections 2.4.1, "Hydrologic Description"; 2.4.12, "Groundwater"; and 2.4.13, "Accidental Releases of Radioactive Liquid Effluents in Ground and Surface Waters"; and information and guidance from Branch Technical Position (BTP) 11-6, "Postulated Radioactive Releases Due to Liquid-containing Tank Failures". Branch Technical Position BTP 11-6 provides guidance in assessing, in accordance with 10 CFR 20 concentration limits, a potential release of radioactive liquids following the postulated failure of a tank and its components, located outside of containment, and impacts of the release of radioactive materials at the nearest potable water supply, located in an unrestricted area, for direct human consumption or indirectly through animals, crops, and food processing.

The staff requests that the following issues be addressed and any proposed FSAR changes be included in response:

- ESBWR DCD Section 11.2.3.2, states that an assessment of liquid releases following a postulated failure of a liquid waste management system tank and its components in accordance with BTP 11-6 is provided in DCD Section 15.3.16. However, DCD Section 15.3.16.3 indicates that "no liquid effluent is released to the environment as a result of the tank failure."
- 2. BTP 11-6 is not referenced in DCD Section 15.3.16. The BTP 11-6 analysis is performed in FSAR Section 2.4.13.
- 3. DCD sections 11.2.3.2 and 15.3.16 should not be incorporated by reference into the NA3 FSAR.
- DCD Section 11.2.3.2 paragraph 5 should be replaced, and FSAR Section 11.2.3.2 modified to include information similar to the APWR FSAR section 11.2.3.2 regarding BTP 11-6 and ISG-013 and referal to FSAR Section 2.4.13 for BTP 11-6 and ISG-013 analysis.

Issue Date: 10/20/2014 Application Title: North Anna, Unit 3 - Docket Number 52-017 Operating Company: Dominion Docket No. 52-017 Review Section: 11.02 - Liquid Waste Management System Application Section: 11.2.3.2

### **QUESTION:**

Acceptance criteria in SRP 11.2 are based on meeting the relevant requirements of 10 CFR 20.1302, as it relates to radioactivity in liquid effluents released to unrestricted areas and doses to offsite receptors. Throughout the FSAR a constant DF for liquid releases is stated to be 1000.

Please describe as noted in section 11.2.3.2, the "independent dilution pump," its location, general procedure for use, interlocks, actuations, and capabilities. This information should be able to support the maintained liquid effluent release dilution factor of 1000 for NA3, with or without the dilution flow from Units 1 and 2. Include these descriptions in the FSAR. Please address these items and provide a mark-up for the proposed FSAR changes.