

Southern Nuclear Operating Company  
VEGP Units 3 & 4

License Amendment Request (LAR)  
Topics of Discussion

June 13, 2012

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## Part 52 Construction Phase LARs

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- ◆ Design finalization still in progress
  - ◆ No as-built information yet
- ◆ LARs being submitted to support construction in accordance with License and ISG-25
- ◆ Changes must be justified and technically supported
- ◆ NRC review consists of audits and inspections of supporting information
- ◆ Licensee desires to effectively and efficiently support NRC review

## Part 52 Construction Phase LARs

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- ◆ Work with NRC to facilitate more pre-submittal meetings and discussions
  - ◆ Licensee provide overview of scope and description of change
  - ◆ Confirm review areas of focus and likely technical documents of interest
- ◆ Pre-submittal interactions could determine on case-by-case basis the primary technical documents of interest
- ◆ NRC input on timing of document availability and duration needed

## LAR Content – Tier 2 departure involving departure from Tier 1 information

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- ◆ **Purpose:** Summarize License Amendment Request approach for satisfying Part 52, Appendix D, VIII.B.5.a
- ◆ **Approach:** Provide Examples of current and near-term departures including Tier 2 departures and associated Tier 1 departures
- ◆ **Goal:** Achieve a consistent understanding of information to be addressed in COL Amendment Requests

## LAR Content – Tier 2 departure involving departure from Tier 1 information

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- ◆ 10 CFR 52, App. D, VIII.B.5.a: An applicant or licensee who references this appendix may depart from Tier 2 information, without prior NRC approval, unless the proposed departure involves a change to or departure from Tier 1 information, Tier 2\* information, or the TS, or requires a license amendment under paragraphs B.5.b or B.5.c of this section. When evaluating the proposed departure, an applicant or licensee shall consider all matters described in the plant-specific DCD.

## LAR Content – Tier 2 departure involving departure from Tier 1 information

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- ◆ LAR-12-004 – Structures and Layout Changes
- ◆ First Bay wall height and thickness changes
  - ◆ Increase three levels of Turbine Building main bay by 3 feet
  - ◆ First Bay floors remain at original elevations
  - ◆ Floor mismatch limits steam vent space area in wall 11.2
  - ◆ First Bay roof raised by 8 ft. to provide adequate vent area
    - ◆ Increase thickness of First Bay east and west walls to 3 ft.

# LAR Content – Tier 2 departure involving departure from Tier 1 information

## ◆ Tier 1 Departure

Table 3.3-1, "Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building"

Wall or Section Description	Floor Elevation or Elevation Range	Concrete Thickness
Wall adjacent to Column Line I.2	From 100'-0" to 169'-0"	3'-0"
Wall along Column Line 11.2	From 100'-0" to 169'-0"	2'-0"

## ◆ Tier 2 Departure involving departure from Tier 1

- ◆ Figure 1.2-27 – This figure is changed to identify the First Bay elevation as 169'-0"
- ◆ LAR assessment for Tier 1 departure provides basis for individual Tier 2 figure changes

## LAR Content – Tier 2 departure involving departure from Tier 1 information

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### ◆ **Tier 2 Departure involving change to or departure from Tier 1**

- ◆ Section 9A.3.2.4 – Changed the elevation description for the elevator service from 161'-0" to 170'-0". Change the elevation of the elevator machine room from 171'-0" to 196'-3"
- ◆ LAR will address Tier 2 activity (i.e., Turbine Building elevation changes) similar to evaluation of Tier 1 departure



## LAR Content – Tier 2 departure not involving departure from Tier 1

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- ◆ Tier 2 Departures that do not involve change to or departure from Tier 1
  - ◆ Example: Figure 1.2-27 - Two restrooms (rooms 20603 and 20604) were removed from the northeast corner of the Operating Deck, Heater Bay, El. 170'-0".
  - ◆ This change was screened and determined to:
    - ◆ NOT meet VIII.B.5.b and VIII.B.5.c
    - ◆ NOT involve a departure from Tier 1
  - ◆ This change was only identified in LAR because these rooms were shown on same figures as changes involving Tier 1
  - ◆ This change need not be addressed in the revised LAR

## LAR Content – Tier 2 change involving Tier 1

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- ◆ LAR-12-005 – Electrical Penetration LAR
- ◆ 4 more Electrical Penetrations were required over what was provided in COL Appendix C (Tier 1 DCD Rev. 19)
- ◆ Tier 1 Departures
  - ◆ Add 4 penetrations to Table 2.2.1-1
  - ◆ Change Penetration note on Figure 2.2.1-1
  - ◆ Add 4 penetrations to Table 2.2.3-6
- ◆ Tier 2 Departures
  - ◆ Add 4 penetrations Test Isolation Valves to Tables 3.2-3, 3.11-1, and 3I.6-3.
  - ◆ Change Figure 6.2.5-1 to list the electrical penetrations as typical of 29 and adding the test isolation valves.

## LAR Content – Tier 2 change involving Tier 1

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- ◆ LAR-12-005 – Electrical Penetration LAR
  - ◆ Tier 1 departure is directly related to the departure in Tier 2
  - ◆ No other Tier 2 departure is requested
  - ◆ As design has matured the need for 4 more electrical penetrations was identified
  - ◆ The additional items that require the penetrations were already included as part of DCD Rev. 19
    - ◆ Increase in the number of CRDMs
    - ◆ Increase in number and size of CRDM fans
    - ◆ Increase in number of VCS fans
  - ◆ Penetration design is same form, fit, and function of electrical penetrations approved under DCD Rev. 19

## LAR Content – Tier 2 change involving Tier 1

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- ◆ LAR-12-00X – Valve Correction LAR Example
- ◆ RNS Valve V045 (RNS-PL-V045 Normal Residual Heat Removal System (RNS) Pump Discharge Relief Valve)
- ◆ Tier 1 Departures
  - ◆ Removes the Active Safety Function of Valve from Tier 1 Table 2.3.6-1.
- ◆ Tier 2 Departures
  - ◆ Remove Valve from Table 3.9-12, List of ASME Class 1, 2, and 3 Active Valves.
  - ◆ There are no other changes to Tier 2 associated with this change.

## LAR Content – Tier 2 change involving Tier 1

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- ◆ LAR-12-00X cont. (RNS Valve V045)
  - ◆ Valve is no longer labeled as Active Safety Function.
  - ◆ Previous to DCD Rev. 17, the valve had served an active safety function.
  - ◆ The long-term containment make-up function was moved from RNS heat exchanger drain lines to the RNS discharge containment isolation test connection valve, RNS-PL-V012.
  - ◆ This was reviewed and approved as part of the amendment for DCD Rev. 19 in Section 5.4.7.5, and is specifically addressed in the FSER.

# LAR Content – Tier 1 departure to reflect DCD Rev. 19 approved Tier 2 design

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- ◆ **Issue:** Tier 1 Tables label radiation monitor PSS-RE027 as a gaseous monitor which is in conflict with Tier 2 Section which explicitly identifies it as a particulate monitor.
- ◆ **Background:** Tier 2 Section 11.5.2.3.1 of the DCD provides the design requirements for radiation monitoring of the containment atmosphere. As discussed in this section PSS-RE026 and 027 are both utilized to monitor containment radiation levels, gaseous and particulate, respectively. Within this section the design function of 027 is discussed in detail and defines that 027 clearly functions as a particulate monitor.
- ◆ **Requested Change:** Change Tier 1 tables to accurately reflect the design requirement of PSS-RE027 as a particulate monitor. The requested change is to provide consistency between the Tier 1 and Tier 2 information. No change to the underlying design basis of the facility has occurred.
- ◆ **Significant Hazards Determination:** In summary, all criterion are responded to in a negative manner, since no change in the design or operation of the facility has occurred. The basis for the change is not a technical issue and editorial in nature.
- ◆ **Exemption Request:** The change is to ensure consistency within the Licensing basis. There is no technical change being requested.
- ◆ **Environmental Considerations:** There is no physical change to the facility, nor a change in the operation of the facility. There are no environmental issues.

# LAR Content – Tier 1 departures w/ no Tier 2 departures

- ◆ LAR-12-00X – Editorial LAR
- ◆ Tier 1 Departure Examples (next 4 tables)
  - ◆ Table 3.3-6 Item 5.c, the word “Valve” should be added to “PXS/Accumulator” to read “PXS Valve/Accumulator”

<b>Table 3.3-6 (cont.)</b> <b>Inspections, Tests, Analyses, and Acceptance Criteria</b>		
<b>Design Commitment</b>	<b>Inspections, Tests, Analyses</b>	<b>Acceptance Criteria</b>
5.c) The boundaries between the following rooms, which contain safety-related equipment – PXS valve/accumulator room A (11205), PXS valve/accumulator room B (11207), and CVS room (11209) – are designed to prevent flooding between these rooms.	An inspection of the boundaries between the following rooms which contain safety-related equipment – PXS Valve/Accumulator Room A (11205), PXS Valve/Accumulator Room B (11207), and CVS Room (11209) – will be performed.	A report exists that confirms that flooding of the PXS Valve/Accumulator Room A (11205), and the PXS/Accumulator Room B (11207) is prevented to a maximum flood level as follows: PXS A 110'-2", PXS B 110'-1"; and of the CVS room (11209) to a maximum flood level of 110'-0".
6.a) The available room volumes	An inspection will be performed	A report exists and concludes that the

# LAR Content – Tier 1 departures w/ no Tier 2 departures

- ◆ LAR-12-00X – Editorial LAR
- ◆ Tier 1 Departure Examples (next 4 tables)
  - ◆ Table 2.7.1-4 Item 2.b, ITA should be for ASME “piping” not “components.” Components are addressed in Item 2.a.

SUBSECTION 2.7.1		SUBSECTION 2.7.1.
2.a) The components identified in Table 2.7.1-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements.	Inspection will be conducted of the as-built components as documented in the ASME design reports.	The ASME Code Section III design reports exist for the as-built components identified in Table 2.7.1-1 as ASME Code Section III.
2.b) The piping identified in Table 2.7.1-2 as ASME Code Section III is designed and constructed in accordance with ASME Code Section III requirements.	Inspection will be conducted of the as-built <b>components</b> as documented in the ASME design reports.	The ASME code Section III design reports exist for the as-built piping identified in Table 2.7.1-2 as ASME Code Section III.
3.a) Pressure boundary welds in	Inspection of the as-built pressure	A report exists and concludes that



# LAR Content – Tier 1 departures w/ no Tier 2 departures

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- ◆ LAR-12-00X – Editorial LAR
- ◆ Tier 1 Departure Examples (next 4 tables)
  - ◆ Spelling Issue in Table 2.6.6-1, Item 1 “lighting” should be “lightning”

<p>(3) equipment grounding of equipment enclosures, metal structures, metallic tanks, ground bus of switchgear assemblies, load centers, motor control centers, and control cabinets. Lightning protection is provided for exposed structures and buildings housing safety-related and fire protection equipment. Each grounding system and lighting protection system is grounded to the station grounding grid.</p>	<p>grounding system connection to the station grounding grid will be performed.</p> <p>iv) An inspection for the lightning protection system connection to the station grounding grid will be performed.</p>	<p>equipment grounding system and the station grounding grid.</p> <p>iv) A connection exists between the lighting protection system and the station grounding grid.</p>
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# LAR Content – Tier 1 departures w/ no Tier 2 departures

- ◆ LAR-12-00X – Editorial LAR
- ◆ Tier 1 Departure Examples (next 4 tables)
  - ◆ Typo in Table 2.2.3-4, Item 8.c.xii, “PSX” should be “PXS”

Table 2.2.3-4 (cont.) Inspections, Tests, Analyses, and Acceptance Criteria		
Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
	xi) Inspection of the as-built CMT inlet diffuser will be conducted.  xii) Inspections will be conducted of the CMT level sensors (PSX-11A/B/D/C, - 12A/B/C/D, - 13A/B/C/D, - 14A/B/C/D) upper level tap lines.	xi) The CMT inlet diffuser has a flow area $\geq 165 \text{ in}^2$ .  xii) Each upper level tap line has a downward slope of $\geq 2.4$ degrees from the centerline of the connection to the CMT to the centerline of the connection to the standpipe.

## NRC Feedback on LARs 12-004 and -005

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- ◆ Present revised approach for LAR-12-005 exemption request in response to NRC feedback
- ◆ Obtain clarification from NRC on LAR comments and observations
- ◆ Goal: Achieve a consistent understanding of information to be addressed in Exemption Requests and LARs

## Exemption Request Content

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1. This exemption is authorized by law
2. **This exemption will not present an undue risk to the health and safety of the public**
3. The exemption is consistent with the common defense and security
4. Special circumstances are present
5. **The special circumstances outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption**
6. **The design change will not result in a significant decrease in the level of safety**

## Exemption Request Content - Example

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- ◆ LAR-12-005: Additional Containment Electrical Penetration Assemblies (EPAs)
- ◆ Background – Identified a need for 4 additional EPAs to support the number of electrical loads and instrumentation signals inside containment
- ◆ Departures from Tier 1:
  - ◆ Table 2.2.1-1, Containment System equipment & components
  - ◆ Figure 2.2.1-1, Containment System depiction
  - ◆ Table 2.2.3-6, Equipment to withstand severe accidents
- ◆ Additional EPAs will be same fit, form, and function as other non-Class 1E EPAs
  - ◆ Passive components
  - ◆ ASME Class III

# Revised Exemption Request Approach

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## **The exemption will not present an undue risk to the health and safety of the public**

- ◆ Approach: Demonstrate how design function will be met and no new accident initiators are introduced
- ◆ Design function of Containment is to limit releases in the event of an accident
- ◆ No undue risk to public safety:
  - ◆ EPAs allow passage of electrical conductors through containment while supporting this design function
  - ◆ Same form, fit & function as previously approved EPAs – no new accidents
- ◆ No undue risk to public health:
  - ◆ Design same as previously approved EPAs
  - ◆ Periodic testing to confirm acceptable low leakage

## Revised Exemption Request Approach

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**The special circumstances outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption**

- ◆ Approach: address the ability to meet the key design functions associated with this change in comparison to the decrease in safety from reduction in standardization
- ◆ Key design function – to limit releases in event of an accident - is still met
- ◆ No specific decrease in safety or ability to meet key design function is identified as a result of reduction in standardization
- ◆ Therefore, the special circumstances associated with the requested exemption outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption.

## Revised Exemption Request Approach

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### **The design change will not result in a significant decrease in the level of safety**

- ◆ Approach: Assess “level of safety” before & after change
- ◆ Level of safety is defined to be consistent with “margin of safety” associated with design change
- ◆ For Containment EPAs, the level of safety is related to the ability of the containment to maintain overall leakage within limits established by dose analyses
- ◆ Level of safety is: established by design analysis, supported by design, preserved by maintenance, confirmed by testing
- ◆ Level of safety is not changed by additional EPAs
- ◆ Therefore, the design change will not result in a significant decrease in the level of safety.



## Clarification on NRC Feedback on LAR 12-004, Structures and Layout

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- ◆ “The licensee does not address any impact on emergency plans or security plans...as required by 10 CFR 73.58.”
- ◆ Discuss details of Change 128

## Clarification on NRC Feedback on LAR 12-005, Add'l Electrical Penetrations

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- ◆ Regulatory Requirements, Codes and Standards
- ◆ Staff comments on the exemption request relating to EPAs and Passive Core Cooling System