

**Tabulation of Proposed Changes in License Amendment Request**

(Licensee input in red text.)

**Description**  
(LAR Page #)

**Justification**  
(LAR Page #)

**Changes Approval Explicitly Requested:**

<p>1) Removal of use of shutdown cooling system to support spent fuel pool cooling with a full core offload to the spent fuel pool. SFPC system capable of being used to remove the maximum expected decay heat load from 1830 (i.e., max SFP capacity) fuel assemblies, including a full core discharge. <b>YES</b></p>	<p align="center">1, 3, &amp; 5 of 26</p>	<p align="center">9 - 16 of 26</p> <ol style="list-style-type: none"> <li>1. This implies that the full core discharge for both normal and abnormal operations. Page 10 indicates that Cases 1 and 2 for abnormal operation and Case 3 and 7 for normal operation.</li> <li>2. One of differences between normal and abnormal operations is the number of the fuel assemblies already in the SFP prior to the discharge and the decay times of the fuel assemblies. This difference is shown by the decay heat of the fuel assemblies already in the SFP prior to the discharge.</li> <li>3. For Abnormal operation, on Page 14, Case 1 justifies 2 SFPC loops are OK if the discharge starts 4.36 days after shutdown with maximum SRW temperature of 50 °F and SFP temperature of 150 °F. ILD Calculation will justify the case when 1 SFPC loop is lost and add calculations for more SRW temperature values.</li> <li>4. For full core offload Normal operations, Case 3 justifies 2 SFPC loops with maximum SRW temperature of 50 °F and SFP temperature of 150 °F. ILD Calculation will justify the case when 1 SFPC loop is lost and add calculations for more SRW temperature values.</li> </ol>
<p>2) Increase the spent fuel pool temperature limit from 130 °F to 150 °F with a full core offload to the spent fuel pool (i.e., 217 fuel assemblies). <b>YES</b></p>	<p align="center">1 &amp; 5 of 26</p>	<p align="center">9 – 16 of 26</p> <ol style="list-style-type: none"> <li>1. See justifications of Question 1.</li> <li>2. ILD Calculation will support SFP temperature of 150 °F.</li> </ol>

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3) New Technical Requirements Manual section concerning full core offload. <b>YES</b>	Attachment 2	<ol style="list-style-type: none"> <li>1. TRM will include tables for <del>both full core offload and partial core shuffle</del> for 2 SFPC loops.</li> <li>2. ILD Calculation will justify the case when 1 SFPC loop is lost. Then, TRM will include tables for <del>both full core offload and partial core shuffle</del> for the case when 1 SFPC loop is lost.</li> </ol>

**Changes Not Overtly Identified as a Change Requesting Approval:**

4) Simplified approach to take credit for time it takes bulk SFP to heat up to 150 °F description <b>YES</b>	5 – 6 of 26 or 9 – 12 of 26	<p align="center">9 - 16 of 26</p> <ol style="list-style-type: none"> <li>1. ILD Calculation does not directly use the decay heat values of the fuel assemblies already in the SFP prior to the discharge, which is determined in the design basis calculation CA06535 Revision 2. Instead, ILD Calculation, for simplicity and convenience, assumes the decay heat values of the fuel assemblies already in the SFP prior to the discharge (See Table 3.1 of the ILD calculation).</li> <li>2. ILD Calculation takes credit of extra decay time due to consideration of SFP heat up (assuming SFP temperature is increased from 92 °F to 150 °F) in the SFP heat balance calculations, which is different from the current UFSAR method (ES200500540-000-0000 assumes SFP temperature is 120 °F for normal operation and 130 °F for abnormal operation) where the SFP heat up is not considered.</li> </ol>
5) Increase the spent fuel pool temperature limit from 120 °F to 150 °F not including a full core offload. <b>YES</b>	3 of 26	<ol style="list-style-type: none"> <li>1. See justifications of Question 1 and Question 4.</li> </ol>

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	<b>Description</b> (LAR Page #)	<b>Justification</b> (LAR Page #)
6) Increase in decay heat load from 22.33x10 <sup>6</sup> Btu/hr (for limited decay time 3.5 days with initial core alteration time of 3 days after shutdown) to 34.4x10 <sup>6</sup> Btu/hr (for limited decay time 7 days with initial core alteration time of 6 days after shutdown). <b>YES</b>	3 of 26	<ol style="list-style-type: none"> <li>1. 22.33x10<sup>6</sup> Btu/hr is the bounding decay heat determined in the design basis calculation CA06535 Revision 1 for the previous Standard and VAP fuel assemblies.</li> <li>2. 34.4x10<sup>6</sup> Btu/hr is the bounding decay heat determined by using the design basis calculation CA06535 Revision 2 for all fuel types (the previous Standard and VAP fuel and the current Framatome fuel assemblies).</li> <li>3. However, ILD Calculation assumes conservative decay heat values of the fuel assemblies already in the SFP prior to the discharge based on the decay heat results in CA06535 Revision 2. See justification #2 of Question 4.</li> </ol>
7) Decrease in maximum service water temperature from 65 °F (to support decay time of 3.5 days) to 50 °F (to support decay time of 6 days). <b>YES</b>	3 of 26	<ol style="list-style-type: none"> <li>1. ILD Calculation will support the change of the SRW temperature from 65 °F to 50 °F. See justifications of Question 1.</li> <li>2. Note that ECP-20-000436 approved the UFSAR change markup against UFSAR Revision 51: "A maximum SRW temperature of 69 °F is required to support a minimum decay time of 4.5 days for partial core offload of 125 fuel assemblies".</li> </ol>
8) Increase from 100 assembly batch reload to 101 assembly batch reload. <b>NO</b>	3 of 26	<ol style="list-style-type: none"> <li>1. 100 assembly batch reload is the one that yields the bounding decay heat (22.33x10<sup>6</sup> Btu/hr) determined in the design basis calculation CA06535 Revision 1 for the Previous Standard and VAP fuel assemblies.</li> <li>2. Similarly, 101 assembly batch reload is the one that yields the bounding decay heat determined in the design basis calculation CA06535 Revision 2 for all fuel types (the Previous Standard and VAP fuel and the current Framatome fuel assemblies).</li> </ol>
9) Change hypothetical sequence of events <b>YES</b>	4 - 6 of 26	?

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<b>From:</b>	<b>To:</b>		
84 fuel assemblies from Unit 1 after an average of 1860 days of reactor operation at 2738 MWt	125 fuel assemblies from Unit 1 after an average of 1498 days of reactor operation at 2738 MWt and are replaced with 101 fresh fuel assemblies and 24 oldest spent fuel assemblies		<b>1. From Here:</b>
84 fuel assemblies removed from Unit 2 after average of 1860 days of irradiation and 365 days after Unit 1 refueling	125 fuel assemblies removed from Unit 2 after average of 1498 days of irradiation and 365 days after Unit 1 refueling		----- Case ?
84 fuel assemblies removed from Unit 2 and replaced with fresh fuel	125 fuel assemblies removed from Unit 2 and replaced with 101 fresh fuel assemblies and 24 oldest spent fuel assemblies from SFP		----- Case ?
84 fuel assemblies removed from Unit 1 after average of 1860 days of irradiation and 365 days after Unit 2 refueling	125 fuel assemblies removed from Unit 1 after average of 1498 days of irradiation and 365 days after Unit 2 refueling		----- Case ?
84 fuel assemblies removed from Unit 1 and replaced with fresh fuel	125 fuel assemblies removed from Unit 1 and replaced with 101 fresh fuel assemblies and 24 oldest spent fuel assemblies from SFP		----- Case ?

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		<b>Description</b> (LAR Page #)	<b>Justification</b> (LAR Page #)
67 oldest fuel assemblies assumed to be removed from the pool to allow for complete filling of the racks with newer fuel	12 oldest fuel assemblies assumed to be removed from the pool to allow for complete filling of the racks with newer fuel		Case ?
Changes in table	Assumes age of 1488 stored fuel assemblies in the SFP are 2 years and the last 125 stored fuel assemblies have 330 days of age		<p><b>2. Up to here, these are description of how to fill the pool full configuration that yields the bounding decay heat load for abnormal operations with full core offload.</b></p>
	Determine acceptable time after shutdown for each SRW temperature to maintain pool at a temperature at 150°F		<p><b>1. This is an assumption of the decay heat of the existing fuel in the SFP prior to the discharge in ILD Calculation. See Justification 2 of Question 4.</b></p>
75 °F maximum SRW temperature is required to support a minimum decay time of 4.5 days	50 °F maximum SRW temperature is required to support a minimum decay time of 4.5 days		<p><b>ILD Calculation will justify the cases with different SRW temperature values for full and partial core offloads and accident with 1 SFPC lost.</b></p> <p><b>So far, ILD Calculation only justifies 50 °F for the maximum SRW temperature and will provide in future more cases to justify the maximum SRW temperature values.</b></p>
10) Decrease maintaining pool temperature from 155 °F to 150 °F, if one SFPC loop is lost and the remaining SFPC loop is removing decay heat. <b>YES</b>		7 of 26	<p><b>1. ILD Calculation justifies 150 °F would be the maximum SFP temperature while removing decay heat for all cases.</b></p>

**Possible Impacts Explicitly Addressed**

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11) Structural integrity of the spent fuel pool	16 of 26	16 of 26
12) SFP cooling system/purification system	16 of 26	16 of 26
13) SFP temperature rise on criticality	16 of 26	16 of 26
14) Fuel handling incident and control room dose	17 of 26	17 of 26