

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of

NUCLEAR INNOVATION NORTH AMERICA LLC

(South Texas Project Units 3 and 4)

Docket Nos. 52-012-COL
52-013-COL

ORDER
(Transmitting Post-Hearing Questions)

The Commission held an evidentiary hearing on November 19, 2015, on the uncontested portion of the captioned proceeding. Nuclear Innovation North America LLC and the NRC Staff should file written responses to the post-hearing questions listed in the table below no later than **December 7, 2015**. The responses should be filed as exhibits, using the previously-established numbering scheme. The parties should consult prior to filing their responses and indicate whether there are any objections to admitting the new exhibits into the record. Absent objection, the new exhibits will be admitted. This order is issued pursuant to my authority under 10 C.F.R. § 2.346(a) and (j).

No.	Category	Reference(s)	Directed To	Question
1	Safety	(a) FSAR Tier 2, Rev. 12, Section 5.3.1.6.5 (b) FSER Section 5.3.1.4 (c) Staff Response to Pre-hearing Question #29	Applicant	<p>In FSAR Tier 2, Section 5.3.1.6.5, NINA includes the following STD DEP Vendor departure for alternative dosimetry testing that is based on the equivalent departure identified in the ABWR DCD, as administratively amended by the applicant: <i>"A separate neutron dosimeter is provided so that fluence measurements may be made at the vessel ID during the first fuel cycle to verify the predicted fluence at an early date in plant operation. This measurement is made over this short period to avoid saturation of the dosimeters now available. Once the fluence-to-thermal power output is verified, no further dosimetry is considered necessary because of the linear relationship between fluence and power output. It will be possible, however, to install a new dosimeter, if required, during succeeding fuel cycles."</i></p> <p>Does the referenced departure mean that either: (a) NINA will not be performing any further dosimetry testing of external dosimeter locations once the initial round of external dosimetry testing is completed, or (b) that NINA will not be performing any further dosimetry testing of both external and internal dosimeter specimens once the initial round of external dosimetry testing is completed?</p>
2	Safety	(a) FSAR, Tier 2, Rev. 12, Section 5.3 (b) 10 CFR Part 50, Appendix H, Reactor Vessel Material	Staff Applicant	<p>FSAR Sections 5.3.1.6.1 and 5.3.4.2 discuss the reactor vessel material surveillance program capsule withdrawal schedule. At the hearing, NINA stated that its plan is to withdraw four capsules during the initial 40-year licensing period, and its withdrawal schedule is intended to be consistent with ASTM E185. Tr. at 178-79.</p> <p>The following table shows the expected times of withdrawal for capsules under the ASTM E 185 schedule for a four-capsule program and the FSAR schedule.</p>

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		<p>Surveillance Requirements</p> <p>(c) ASTM Standard Practice E 185, 1982 Edition (ASTM E 185-82)</p> <p>(d) Response to Pre-hearing Question #30</p> <p>(e) Transcript at 178-79</p>		<table border="1" data-bbox="932 428 1934 1016"> <thead> <tr> <th data-bbox="932 428 1182 509"></th> <th data-bbox="1182 428 1549 509">ASTM E 185 Table 1</th> <th data-bbox="1549 428 1934 509">FSAR Sec. 5.3.1.6.1</th> </tr> </thead> <tbody> <tr> <td data-bbox="932 509 1182 591">1st Capsule</td> <td data-bbox="1182 509 1549 591">No later than 3 effective full power years (EFPY)</td> <td data-bbox="1549 509 1934 591">After 6 EFPY</td> </tr> <tr> <td data-bbox="932 591 1182 672">2nd Capsule</td> <td data-bbox="1182 591 1549 672">No later than 6 EFPY</td> <td data-bbox="1549 591 1934 672">After 20 EFPY</td> </tr> <tr> <td data-bbox="932 672 1182 821">3rd Capsule</td> <td data-bbox="1182 672 1549 821">No later than 15 EFPY</td> <td data-bbox="1549 672 1934 821">With an exposure not to exceed peak end-of-life fluence</td> </tr> <tr> <td data-bbox="932 821 1182 1016">4th Capsule</td> <td data-bbox="1182 821 1549 1016">When capsule achieves a neutron fluence not less than once or greater than twice the peak end-of-life fluence</td> <td data-bbox="1549 821 1934 1016">Determined based on results of first two capsules</td> </tr> </tbody> </table> <p data-bbox="932 1052 1934 1149">The FSAR schedule does not appear to match the withdrawal schedule in Table 1 of ASTM E 185-82. Please explain which schedule applies to STP and why.</p>				ASTM E 185 Table 1	FSAR Sec. 5.3.1.6.1	1st Capsule	No later than 3 effective full power years (EFPY)	After 6 EFPY	2nd Capsule	No later than 6 EFPY	After 20 EFPY	3rd Capsule	No later than 15 EFPY	With an exposure not to exceed peak end-of-life fluence	4th Capsule	When capsule achieves a neutron fluence not less than once or greater than twice the peak end-of-life fluence	Determined based on results of first two capsules
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No.	Category	Reference(s)	Directed To	Question
3	Safety	(a) SER, Ch. 7 (b) Branch Technical Position (BTP) 7-21 (c) Response to Pre-hearing Question #38	Staff Applicant	<p>In Pre-hearing Question 38, the Commission asked whether there is an ITAAC to verify that the as-built Engineered Safety Features Logic and Control System (ELCS) meets the 70 percent central processing unit (CPU) load restriction. NINA's response indicates that there is no specific ITAAC to verify that the 70% CPU load restriction is met for the as-built ELCS. Although NINA points to several ITAACs within the application that verify the overall system requirements are met for the ELCS, no specific maximum CPU loading testing or analysis requirements are identified in these ITAACs. The AP1000 design certification, which also uses the Common Q platform, includes a specific ITAAC to verify that the maximum CPU loading requirements are met in the as-built safety system (ITAAC Item 11.d in AP1000 FSAR, Tier 1, Table 2.5.2-8).</p> <p>If COLs are issued, would it be appropriate to include the following acceptance criterion for ITAAC 3.4.8b(7) to verify that the as-built ELCS meets the 70 percent CPU load restriction?</p> <p>"Response time test performed under maximum CPU loading to demonstrate that the safety system can fulfill its response time criteria."</p>

IT IS SO ORDERED.

For the Commission

NRC SEAL

/RA/

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
this 30th day of November, 2015.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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(South Texas Project, Units 3 and 4))
(Mandatory Hearing))

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing **ORDER (Transmitting Post-Hearing Questions)** have been served upon the following persons by the Electronic Information Exchange.

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[Original signed by Brian Newell _____]
Office of the Secretary of the Commission

Dated at Rockville, Maryland
this 30th day of November, 2015