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10 CFR 50.4
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December 19, 2008

UN#08-079

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: UniStar Nuclear Energy, NRC Docket No. 52-016
Submittal of Response to Request for Additional Information for the Calvert Cliffs
Nuclear Power Plant, Unit 3
RAI No. 24 – Initial Plant Test Program – Design Certification and New License
Applicants, Questions 14.02-10, 14.02-11, and 14.02-12

Reference: John Rycyna (NRC) to George Wrobel (UniStar), "Draft RAI No 24 CQVP 1153,"
email dated October 2, 2008

The purpose of this letter is to respond to the request for additional information (RAI) identified in the NRC e-mail correspondence to UniStar Nuclear, dated October 2, 2008 (Reference). This RAI addresses the Initial Plant Test Program, as discussed in Section 14.2 of the Final Safety Analysis Report (FSAR), as submitted in Part 2 of the CCNPP Unit 3 Combined License Application (COLA), Revision 3.

The enclosure provides our response to RAI No. 24, Questions 14.02-10, 14.02-11, and 14.02-12, which includes revised COLA content. A Licensing Basis Document Change Request has been initiated to incorporate this change into a future revision of the COLA. There are no new regulatory commitments in this correspondence.

If there are any questions regarding this transmittal, please contact me at (410) 470-4205 or Mr. George Wrobel at (585) 771-3535.

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NRO

I declare under penalty of perjury that the foregoing is true and correct.

Executed on December 19, 2008

A handwritten signature in black ink, appearing to read 'Greg Gibson', with a long horizontal line extending to the right.

Greg Gibson

Enclosure: Response to RAI No. 24, Initial Plant Test Program – Design Certification and New License Applicants, Questions 14.02-10, 14.02-11, and 14.02-12

cc: U.S. NRC Region I
U.S. NRC Resident Inspector, Calvert Cliffs Nuclear Power Plant, Units 1 and 2
NRC Environmental Project Manager, U.S. EPR Combined License Application
NRC Project Manager, U.S. EPR Combined License Application
NRC Project Manager, U.S. EPR Design Certification Application (w/o enclosure)

Enclosure

Response to RAI No. 24

Initial Plant Test Program – Design Certification and New License Applicants

Questions 14.02-10, 14.02-11, and 14.02-12

December 19, 2008

RAI Number 24
Question 14.02-10

Standard Review Plan (NUREG-0800) Section 14.2.II.3.i, paragraph F concerning combined license (COL) and operating license applicants, "Review, Evaluation, and Approval of Test Results," states that the COL applicant "should develop procedures that will govern the review, evaluation, and approval of test results for each phase of the test program. Specific procedures should be implemented to ensure notification of responsible organizations, such as design organizations, when test acceptance criteria are not met and specific controls have been established to resolve such problems."

Section 14.2.5 of the applicant's FSAR, "Review, Evaluation, and Approval of Test Results," does not provide a method for the review, evaluation, and approval of test results for each phase of the Initial Test Program before proceeding to the next phase. In addition, Section 14.2.5 of the FSAR does not provide for the development of procedures to ensure notification of responsible organizations, such as design organizations, when test acceptance criteria are not met and specific controls have been established to resolve such problems.

Consistent with SRP Section 14.2, please revise section 14.2.5 of the FSAR to include the provisions for the development of procedures to control the review, evaluation, and approval of test results for each phase of the test program, and for the development of procedures to ensure notification of responsible organizations, such as design organizations, when test acceptance criteria are not met and that specific controls have been established to resolve such problems, or justify an alternative.

RESPONSE:

The preoperational and startup test review team "TRT" is used to perform this function. The TRT is used to review the startup tests before the tests are performed and to review the completed test results and any revisions after the test is completed. Section 14.2.5.2 will be revised as shown below.

PROPOSED COLA FSAR REVISION:

The following changes will be included in Revision 4 of the CCNPP, Unit 3 COLA.

14.2.5.2 TEST REVIEW TEAM

The TRT advises on the technical adequacy of the testing program. TRT functions include coordinating organizational responsibility for test procedures and for review, evaluation, and approval recommendation of test results. The TRT chairman is appointed by the {Startup Manager} and the team's minimum membership is:

- TRT Chairman
- AREVA Project Representative
- Architect Engineer Project Representative
- Engineering Department Representative

- Operating Department Representative

TRT members are chosen to provide subject-matter expertise in specific testing phases. Composition of the TRT may be augmented from time to time to obtain necessary additional expertise.

The TRT performs the following startup functions:

- Evaluate adequacy of startup tests prior to performance.
- Reviews completed startup test results and verifies that field revisions did not compromise the intent of the procedure.
- Assures that plant testing documents that the design objectives are met.
- Verify that the test results that do not meet acceptance criteria are entered into the corrective action program and the affected and responsible organizations are notified and have assumed responsibility for resolving the acceptance criteria deficiency. Implementation of corrective actions and retests are performed as required prior to proceeding to the next phase.
- Reviews and approves carryover of prerequisites and Phase I tests to Phases II through IV. Ensures the justification for test deferral requests include a schedule for their performance.
- Maintain records of ITAAC reviews and ensure that work is performed as required prior to proceeding to the next testing Phase.
- Issue a formal recommendation to proceed to the next testing Phase.

RAI Number 24
Question 14.02-11

Standard Review Plan (NUREG-0800) Section 14.2.II.3 paragraph F.ii concerning combined license (COL) and operating license applicants, "Review, Evaluation, and Approval of Test Results," states that "[b]efore proceeding with testing, the applicant should provide controls relating to

- (1) the methods and schedules for approval of test data for each major phase, and
- (2) the methods used for initial review of individual parts of multiple tests (e.g., hot functional testing)."

Section 14.2.5 of the applicant's FSAR, "Review, Evaluation, and Approval of Test Results," does not provide the specific methods and schedules for approval of test data for each major phase, nor does it provide the methods used for initial review of individual parts of multiple tests (e.g., hot functional testing).

The NRC staff requests that the applicant revise section 14.2.5 of the FSAR to include the methods and schedules for approval of test data for each major phase, and the methods used for initial review of individual parts of multiple tests, or to justify an alternative.

RESPONSE:

The preoperational and startup test review team "TRT" is used to perform this function. The TRT is used to review the startup tests before the tests are performed and to review the completed test results and any revisions after the test is completed. As stated in FSAR 14.2.5.3, test results for each phase of the test program are reviewed and verified to be complete (as required) and satisfactory before the next phase of testing is started.

The 6th paragraph in Section 14.2.5.3 will be revised to clarify that the paragraph applies to individual parts of multiple tests as shown below.

PROPOSED COLA FSAR REVISION:

The following changes will be included in Revision 4 of the CCNPP, Unit 3 COLA.

14.2.5.3 TEST EXPECTATIONS

Test results for each phase of the test program are reviewed and verified to be complete (as required) and satisfactory before the next phase of testing is started. Phase I testing on a system is normally not started until all applicable prerequisite tests have been completed, reviewed, and approved. Prior to initial fuel loading and commencement of initial criticality, a comprehensive review of required Phase I tests is conducted by the TRT. This review provides assurance that required plant systems and structures are capable of supporting initial fuel loading and subsequent startup testing.

Phase I testing is completed prior to commencing initial fuel loading. If prerequisite or Phase I tests or portions of such tests cannot be completed prior to commencement of fuel

loading, provisions for carryover testing is planned and approved in accordance with site-specific administrative procedures.

When carryover testing is required, the {Startup Manager} approves each test and identifies the portions of each test that are delayed until after fuel loading. Technical justifications for delays are documented together with a schedule (power level) for completing each carryover test. Carryover testing is approved by the TRT as described in section 14.2.5. Documentation for carryover testing is available for NRC review, as required, prior to commencing fuel loading.

Startup testing phases (Phases II, III, and IV) of the test program are subdivided into the following categories:

- Initial fuel load.
- Precritical tests.
- Initial criticality.
- Low power physics testing.
- Power ascension testing. This testing phase ends with the completion of testing at 100% power.

Each subdivision is a prerequisite which must be completed, reviewed, and approved before tests in the next category are started. Power ascension tests are scheduled and conducted at pre-determined power levels.

Results of tests and individual parts of multiple tests conducted at a plateau are evaluated prior to proceeding to the next level. In tests involving plant transients for which a realistic transient performance analysis has been performed, test results are compared to results of the realistic analysis rather than results of a similar analysis performed using accident analysis assumptions. For those tests which result in a plant transient for which a realistic plant transient performance analysis has been performed, the test results will be compared to the results of the realistic transient analysis to determine if the model should be revised.

Following completion of testing at 100% of rated power, final test results are reviewed, evaluated, and approved. This is accomplished prior to disbanding the startup organization and normal plant operation.

RAI Number 24
Question 14.02-12

Standard Review Plan (NUREG-0800) Section 14.2.II.3, paragraph F.iv concerning combined license (COL) and operating license applicants, "Review, Evaluation, and Approval of Test Results," states that the COL applicant "should include provisions to allow design organizations to participate in the resolution of design-related problems that result in, or contribute to, a failure to meet test acceptance criteria."

The applicant is asked to clarify what provisions in the application, either in Section 14.2.5.1 of the applicant's FSAR, "Review, Evaluation, and Approval of Test Results; Procedure Review and Evaluation" or elsewhere, ensure the involvement of design organizations in the resolution of design-related problems that result in, or contribute to, a failure to meet test acceptance criteria, and to revise Subsection 14.2.5.1 accordingly or justify an alternative.

RESPONSE:

The preoperational and startup test review team "TRT" is used to perform this function. The engineering (design) organization is a member of the TRT as stated in FSAR Section 14.2.5.2. The intent of the TRT reviews is to ensure that the design bases are adequately verified prior to beginning downstream testing. The functions of the TRT are stated in FSAR Section 14.2.5.2. These functions were clarified in response to RAI 14.02-10 and require that affected and responsible organizations (including design) are notified when test acceptance criteria are not met.

PROPOSED COLA FSAR REVISION:

The following changes will be included in Revision 4 of the CCNPP, Unit 3 COLA.

This proposed FSAR Revision was also provided as the response to RAI 14.02-10:

14.2.5.4 TEST REVIEW TEAM

The TRT advises on the technical adequacy of the testing program. TRT functions include coordinating organizational responsibility for test procedures and for review, evaluation, and approval recommendation of test results. The TRT chairman is appointed by the {Startup Manager} and the team's minimum membership is:

- TRT Chairman
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- Operating Department Representative

TRT members are chosen to provide subject-matter expertise in specific testing phases. Composition of the TRT may be augmented from time to time to obtain necessary additional expertise.

The TRT performs the following startup functions:

- Evaluate adequacy of startup tests prior to performance.
- Reviews completed startup test results and verifies that field revisions did not compromise the intent of the procedure.
- Assures that plant testing documents that the design objectives are met.
- Verify that the test results that do not meet acceptance criteria are entered into the corrective action program and the affected and responsible organizations are notified and have assumed responsibility for resolving the acceptance criteria deficiency. Implementation of corrective actions and retests are performed as required prior to proceeding to the next phase.
- Reviews and approves carryover of prerequisites and Phase I tests to Phases II through IV. Ensures the justification for test deferral requests include a schedule for their performance.
- Maintain records of ITAAC reviews and ensure that work is performed as required prior to proceeding to the next testing Phase.
- Issue a formal recommendation to proceed to the next testing Phase.