

## PMVogtleCOLPEm Resource

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**From:** Aughtman, Amy G. [AGAUGHTM@SOUTHERNCO.COM]  
**Sent:** Thursday, September 23, 2010 7:51 PM  
**To:** Sebrosky, Joseph; Spicher, Terri  
**Cc:** Joshi, Ravindra; 'Eddie Grant'; Sparkman, Wesley A.; 'Richard Grumbir'  
**Subject:** draft info for Chapter 14 SUT LC revisions

Joe and Terri,

During a couple of the recent public calls, there have been some questions and concerns regarding the proposed license conditions related to startup testing.

Below is a draft letter in which we would propose revisions to simplify some of the conditions and to address the NRC identified concerns.

Following your review of this information, we would like to discuss these further at your earliest availability (potentially next Thurs).

Please contact me or Eddie Grant with any questions.

Amy A.

### **NuStart Qb Tracking No. #####**

### **NRC eRAI No. #####**

NRC has expressed some concerns regarding the proposed License Conditions for the initial test program. In particular, the proposed License Condition 2 to address COL Information Item No. 14.4-6 seems to indicate that the first-plant-only and three-plant-only testing would be required to be met "prior to preoperational testing." It is not clear how the testing can be done by this identified milestone. Secondly, the generic model COL is expected to be revised to address completion of testing between 5% and 100% power levels. The applicant was requested to consider this possible addition.

### **Response:**

The following propose license conditions in Part 10 of the COLA have been identified as addressing the initial test program:

- LC #2, item 14.4-2, Test Specifics and Procedures
- LC #2, item 14.4-3, Conduct of Test Program
- LC #2, item 14.4-4, Review and Evaluation of Test Results
- LC #2, item 14.4-6, First-Plant-Only and Three-Plant-Only Tests
- LC #3, item H, Startup Testing
- LC #6, item c, Schedule for Test Procedure Availability
- LC #7, First-Plant-Only and Three-Plant-Only Tests
- LC #8, Startup Testing
- LC #9, Power-Ascension Test Phase

Some of these have been identified as duplicative and redundant. As a result, while considering the above NRC expressed concerns, we have also attempted to consolidate the items and arrange them to more closely align with the expected generic model license. Each of the existing items and proposed revisions are discussed below.

LC #2, item 14.4-2, Test Specifics and Procedures

As indicated in the COLA Part 10, this information item is address by proposed License Condition #6, item c. No changes are proposed for this item.

#### LC #2, item 14.4-3, Conduct of Test Program

This item calls for the availability of a site-specific startup administration manual (procedure), which contains the administration procedures and requirements that govern the activities associated with the plant initial test program, as identified in FSAR Section 14.2, prior to initiating the plant initial test program.

This item appears to be unnecessary as it can be adequately addressed by a combination of proposed License Condition #3 (which requires that the operational program that addresses startup testing be implemented prior to beginning the testing) and a revised proposed License Condition #6. The revision would specifically add the site-specific startup administration manual to the items for which a schedule of availability would be provided to the NRC. See proposed change to LC #6 below. With the revision to LC #6, the LC #2, item 14.4-3, would be revised to simply indicate that the information item is addressed by LCs #3 and #6.

#### LC #2, item 14.4-4, Review and Evaluation of Test Results

This item calls for review and evaluation of individual test results as well as final review of overall test results and for review of selected milestones or hold points within the test phases. Additionally, test exceptions or results which do not meet acceptance criteria are identified to the affected and responsible design organizations, and corrective actions and retests, as required, are performed.

Again, this item appears to be unnecessary as it can be adequately addressed by a revised proposed License Condition #9 (which also requires review and evaluation of individual test results, and that test exceptions or results which do not meet acceptance criteria are identified to the affected and responsible organizations, and corrective actions and retests, as required, are performed). The revision would specifically add the review and evaluation of test results for those tests conducted for pre-operational testing and for above low-power testing (<5% rated thermal power) up to and including testing at 100% rated thermal power. This condition would then cover the entire startup testing program and would be retitled as "Startup Program Test Results." See proposed change to LC #9 below. With the revision to LC #9, the LC #2, item 14.4-4, would be revised to simply indicate that the information item is addressed by LC #9.

#### LC #2, item 14.4-6, First-Plant-Only and Three-Plant-Only Tests

This item also calls for review and evaluation of individual test results. Additionally, test exceptions or results which do not meet acceptance criteria are identified to the affected and responsible design organizations, and corrective actions and retests, as required, are performed. Finally, this item calls for written notification of test results for these items.

Again, at least the first two portions of this item appear to be unnecessary as it can be adequately addressed by a revised proposed License Condition #9 (which also requires review and evaluation of individual test results, and that test exceptions or results which do not meet acceptance criteria are identified to the affected and responsible organizations, and corrective actions and retests, as required, are performed). The revision would specifically add the review and evaluation of test results for those tests conducted during pre-operational testing and for those conducted during power ascension, i.e., above low-power testing (<5% rated thermal power) up to and including testing at 100% rated thermal power. See proposed change to LC #9 below. With the revision to LC #9, the LC #7 would be revised to simply address the written notifications for the pertinent testing. See proposed change to LC #7 below.

It should also be noted that this is a standard condition for all AP1000 COL applications. This condition may be appropriately revised for subsequent COLAs, however, once the first-plant and first-three-plant testing has been completed and appropriate documentation is available for reference.

#### LC #3, item H, Startup Testing

This proposed License Condition requires that the operational program that addresses startup testing be implemented prior to beginning the testing.

#### LC #6, item c, Schedule for Test Procedure Availability

This item requires a schedule for availability of initial testing procedures to be provided to NRC. The item is revised to specifically add the site-specific startup administration manual to the items for which the schedule would be provided to the NRC. See proposed change to LC #6 below.

#### LC #7, First-Plant-Only and Three-Plant-Only Tests

This item also calls for review and evaluation of individual test results. Additionally, test exceptions or results which do not meet acceptance criteria are identified to the affected and responsible design organizations, and corrective actions and retests, as required, are performed. Finally, this item calls for written notification of test results for these items. However, the basic need and intent of this item is to provide an appropriate reference for the completion of the testing that can be used by the subsequent COLs.

Again, at least the first two portions of this item appear to be unnecessary as it can be adequately addressed by a revised proposed License Condition #9 (which also requires review and evaluation of individual test results, and that test exceptions or results which do not meet acceptance criteria are identified to the affected and responsible organizations, and corrective actions and retests, as required, are performed). The revision would specifically add the review and evaluation of test results for those tests conducted during pre-operational testing and for those conducted during power ascension, i.e., above low-power testing (<5% rated thermal power) up to and including testing at 100% rated thermal power. See proposed change to LC #9 below. With the revision to LC #9, the LC #7 would be revised to simply address the written notifications to identify the applicable references for documentation for the pertinent testing. See proposed change to LC #7 below.

It should also be noted that this is a standard condition for all AP1000 COL applications. This condition may be appropriately revised for subsequent COLAs, however, once the first-plant and first-three-plant testing has been completed and appropriate documentation is available for reference.

#### LC #8, Startup Testing

This item calls for reporting of any changes made to the Initial Startup Test Program described in Chapter 14 of the FSAR (and the incorporated by reference DCD Chapter 14) shall be reported in accordance with 50.59(d) within one month of such change. No changes are proposed for this item.

#### LC #9, Power-Ascension Test Phase

This item calls for review and evaluation of individual test results as well as notification of completion of the test phases. Additionally, test exceptions or results which do not meet acceptance criteria are identified to the affected and responsible design organizations, and corrective actions and retests, as required, are performed. Finally, the licensee would also be required to notify the NRC of its completion of the each phase of the testing program following the initial fuel loading.

The revision would specifically add the review and evaluation of test results for those tests conducted during pre-operational testing and for those conducted during power ascension, i.e., above low-power testing (<5% rated thermal power) up to and including testing at 100% rated thermal power. With these additions, the condition would then cover the entire startup testing program and would be retitled as "Startup Program Test Results." See proposed change to LC #9 below.

The changes identified in the COL Application Revisions section below will be included in a future COLA amendment.

This response is expected to be STANDARD for the S-COLAs.

## Associated VEGP COL Application Revisions:

1. COLA Part 10, Proposed License Conditions, including ITAAC, proposed License Condition #2, item 14.4-3, Conduct of Test Program, will be revised from:

14.4-3 Conduct of Test Program 14.4.3 Prior to initiating test program

A site-specific startup administration manual (procedure), which contains the administration procedures and requirements that govern the activities associated with the plant initial test program, as identified in FSAR Section 14.2, is provided prior to initiating the plant initial test program.

To read:

14.4-3 Conduct of Test Program 14.4.3

NOTE –addressed by proposed License Conditions #3 and #6.

2. COLA Part 10, Proposed License Conditions, including ITAAC, proposed License Condition #2, item 14.4-4, Review and Evaluation of Test Results, will be revised from:

14.4-4 Review and Evaluation of Test Results 14.4.4 Prior to initial fuel load

The Combined License holder is responsible for review and evaluation of individual test results as well as final review of overall test results and for review of selected milestones or hold points within the test phases. Test exceptions or results which do not meet acceptance criteria are identified to the affected and responsible design organizations, and corrective actions and retests, as required, are performed.

To read:

14.4-4 Review and Evaluation of Test Results 14.4.4

NOTE –addressed by proposed License Condition #9.

3. COLA Part 10, Proposed License Conditions, including ITAAC, proposed License Condition #2, item 14.4-6, First-Plant-Only and Three-Plant-Only Tests, will be revised from:

14.4-6 First-Plant-only and Three-Plant-Only Test 14.4.4 Prior to initial fuel load

The COL holder for the first plant and the first three plants will perform the tests listed in subsection 14.2.5. For subsequent plants, either tests listed in subsection 14.2.5 shall be performed, or the COL applicant shall provide a justification that the results of the first-plant-only tests or first-three-plant tests are applicable to the subsequent plant.

The Combined License holder(s) for the first AP 1000 plant (or first three plants) available for testing will perform the tests defined during preoperational and startup testing as identified in subsections 14.2.9 and 14.2.10. Combined License holders referencing the results of the tests will provide the report as necessary. The schedule for providing this information will be provided prior to preoperational testing.

To read:

NOTE –addressed by proposed License Conditions #7 and #9.

4. COLA Part 10, Proposed License Conditions, including ITAAC, proposed License Condition #6, Operational Program Readiness, will be revised from:

c. the approved preoperational and startup test procedures in accordance with FSAR Subsection 14.2.3.

To read:

c. the approved preoperational and startup test procedures (including the site-specific startup administration manual (procedure) prior to initiating the plant initial test program) in accordance with FSAR Subsection 14.2.3.

5. COLA Part 10, Proposed License Conditions, including ITAAC, will be revised to include a new License condition. Line item 7 will be revised from:

7. First-Plant-Only and First-Three-Plant-Only Testing

Certain design features of the AP1000 plant will be subjected to special tests to establish unique phenomenological performance parameters of the AP1000 design. Because of the standardization of the AP1000 design, these special tests (designated as first-plant-only tests and first-three-plant-only tests) are not required on subsequent plants.

These tests will be controlled through license conditions to ensure that relevant test results are reviewed, evaluated, and approved by the designated licensee management before proceeding with the next testing phase. Accordingly, the following license condition is proposed:

First-Plant-Only and First-Three-Plant-Only Testing

Following completion of the testing, the licensee completing the testing shall review and evaluate individual test results. Test exceptions or results which do not meet acceptance criteria are identified to the affected and responsible organizations, and corrective actions and tests, as required, are performed.

Additionally, the licensee completing the testing shall also provide written notification of completion of the testing to the Director of the Office of New Reactors.

1. For testing completed during pre-critical testing, criticality testing, and during low-power testing, these reports may be in conjunction with the test completion reports required for the power ascension test phase as identified below.
2. For tests completed during operation above 5% RTP, the reports shall be provided for each individual test within thirty (30) calendar days of the licensee confirmation of completion of the testing.

Subsequent plant licensees crediting completion of testing by the first-plant or by the first-three-plants shall provide a report referencing the written notification of completion submitted by the plant(s) completing the testing to the Director of the Office of New Reactors.

To read:

#### 7. First-Plant-Only and First-Three-Plant-Only Testing

Certain design features of the AP1000 plant will be subjected to special tests to establish unique phenomenological performance parameters of the AP1000 design. Because of the standardization of the AP1000 design, these special tests (designated as first-plant-only tests and first-three-plant-only tests) are not required on subsequent plants. Once these tests are completed by the first plant (or first three plants) and appropriate documentation identified, the subsequent plants need only reference the applicable documentation to show that the first plant (or first three plants) completed the required testing. Accordingly, the following license condition is proposed:

##### First-Plant-Only and First-Three-Plant-Only Testing

A licensee completing the testing shall provide written identification of the applicable references for documentation for the completion of the testing to the Director of the Office of New Reactors (or equivalent NRC management) within thirty (30) calendar days of the licensee confirmation of acceptable test results.

Subsequent plant licensees crediting completion of testing by the first-plant or by the first-three-plants shall provide a report referencing the applicable documentation identified by the plant(s) completing the testing to the Director of the Office of New Reactors (or equivalent NRC management). This report shall be provided to NRC either prior to initiation of pre-operational testing, or within 60 days of the identification of the documentation for the completion of the testing by the first plant (or third plant, as appropriate), whichever is later.

6. COLA Part 10, Proposed License Conditions, including ITAAC, proposed License Condition #9, Power Ascension Test Phase, will be revised to address the complete startup testing program, with additions for pre-operational testing, and for above 5% up to and including 100% rated thermal power from:

#### 9. Power Ascension Test Phase

##### Pre-critical and Criticality Testing

1. Following completion of pre-critical and criticality testing, the licensee shall review and evaluate individual test results. Test exceptions or results which do not meet acceptance criteria are identified to the affected and responsible organizations, and corrective actions and retests, as required, are performed.
2. The licensee shall provide written notification to the Director of the Office of New Reactors within fourteen (14) calendar days of completion of the pre-critical and criticality testing.

##### Low-Power (<5% RTP) Testing

1. Following completion of low-power (<5% RTP) testing, the licensee shall review and evaluate individual test results. Test exceptions or results which do not meet acceptance criteria are identified to the affected and responsible organizations, and corrective actions and retests, as required, are performed.
2. The licensee shall provide written notification to the Director of the Office of New Reactors within fourteen (14) calendar days of completion of the low power testing.

To read:

#### 9. Startup Program Test Results

##### Pre-operational Testing

Following completion of pre-operational testing, the licensee shall review and evaluate individual test results. Test exceptions or results which do not meet acceptance criteria are identified to the affected and responsible organizations, and corrective actions and retests, as required, are performed.

##### Pre-critical and Criticality Testing

1. Following completion of pre-critical and criticality testing, the licensee shall review and evaluate individual test results. Test exceptions or results which do not meet acceptance criteria are identified to the affected and responsible organizations, and corrective actions and retests, as required, are performed.
2. The licensee shall provide written notification to the Director of the Office of New Reactors within fourteen (14) calendar days of completion of the pre-critical and criticality testing.

##### Low-Power (<5% RTP) Testing

1. Following completion of low-power testing (<5% RTP), the licensee shall review and evaluate individual test results. Test exceptions or results which do not meet acceptance criteria are identified to the affected and responsible organizations, and corrective actions and retests, as required, are performed.
2. The licensee shall provide written notification to the Director of the Office of New Reactors within fourteen (14) calendar days of completion of the low-power testing.

##### At-Power (5%-100% RTP) Testing

1. Following completion of at-power testing (at or above 5% RTP up to and including testing at 100% RTP), the licensee shall review and evaluate individual test results. Test exceptions or results which do not meet acceptance criteria are identified to the affected and responsible organizations, and corrective actions and retests, as required, are performed.
2. The licensee shall provide written notification to the Director of the Office of New Reactors within fourteen (14) calendar days of completion of the at-power testing.

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