PMVogtleCOLPEm Resource

From: Javorka, Deborah A. [DAJavork@southernco.com]
Sent: Monday, March 01, 2010 6:21 PM
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Cc: Williams, Dana M.
Subject: SNC Letter ND-10-0393 - SNC VEGP Units 3&4 COL Response to Bellefonte Units 3&4 Safety Evaluation Report Open Items for Chapter 3
Attachments: ND-10-0393.pdf

Importance: High

An electronic copy of Southern Nuclear's letter, ND-10-0393 dated March 1, 2010 is attached.
A hard copy has been transmitted to the NRC Document Control Desk via FedEx. Thanks!

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Subject: SNC Letter ND-10-0393 - SNC VEGP Units 3&4 COL Response to Bellefonte Units 3&4 Safety Evaluation Report Open Items for Chapter 3
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Recipients Received:

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SOUTHERN COMPANY

MAR 01 2010

Docket Nos.: 52-025
52-026

ND-10-0393

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

Southern Nuclear Operating Company
Vogtle Electric Generating Plant Units 3 and 4 Combined License Application
Response to Bellefonte Units 3 and 4 Safety Evaluation Report Open Items for Chapter 3

Ladies and Gentlemen:

By letter dated March 28, 2008, Southern Nuclear Operating Company (SNC) submitted an application for combined licenses (COLs) for proposed Vogtle Electric Generating Plant (VEGP) Units 3 and 4 to the U.S. Nuclear Regulatory Commission (NRC) for two Westinghouse AP1000 reactor plants, in accordance with 10 CFR Part 52. As a result of the NRC's detailed review of the initial AP1000 Reference COL application (Bellefonte Units 3 and 4), the NRC has written a safety evaluation report (SER) with open items for the subject chapter. SNC addressed some of the items for VEGP in previous letters as indicated in the enclosure. SNC (VEGP) is addressing additional open items identified in the SER in the enclosure to this letter as the new Reference COL applicant. For completeness, each open item is identified but responses are provided only for the items impacting standard information or otherwise resulting in standard changes for the AP1000 COL applications. The open items identified as plant specific will be addressed on the Bellefonte Units 3 and 4 docket by the Tennessee Valley Authority.

If you have any questions regarding this letter, please contact Mr. Wes Sparkman at (205) 992-5061 or Ms. Amy Aughtman at (205) 992-5805.

Mr. C.R. Pierce states he is the AP1000 Licensing Manager of Southern Nuclear Operating Company, is authorized to execute this oath on behalf of Southern Nuclear Operating Company and to the best of his knowledge and belief, the facts set forth in this letter are true.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY

Charles R. Pierce

Charles R. Pierce

Sworn to and subscribed before me this 1st *day of* March, *2010*

Notary Public: October 24, 2012

My commission expires: Deborah A. Jaworka

CRP/BJS/dmw

Enclosure: Response to R-COLA SER with Open Items, Chapter 3

cc: Southern Nuclear Operating Company
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Mr. J. T. Gasser, Executive Vice President, Nuclear Operations (w/o enclosure)
Mr. D. H. Jones, Site Vice President, Vogtle 3 & 4 (w/o enclosure)
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Mr. T. E. Tynan, Vice President - Vogtle (w/o enclosure)
Mr. D. M. Lloyd, Vogtle 3 & 4 Project Support Director (w/o enclosure)
Mr. M. K. Smith, Technical Support Director (w/o enclosure)
Mr. M. J. Ajluni, Nuclear Licensing Manager
Mr. J. D. Williams, Vogtle 3 & 4 Site Support Manager
Mr. J. T. Davis, Vogtle 3 & 4 Site Licensing Manager
Mr. W. A. Sparkman, COL Project Engineer
Document Services RTYPE: AR01.1053
File AR.01.02.06

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Southern Nuclear Operating Company

ND-10-0393

Enclosure

Response to R-COLA SER with Open Items

Chapter 3

Open Item	Response
03.04-01	Plant-Specific – Bellefonte (not included)
03.06-01	Standard – Pending WEC OI submittal
03.09-01	Standard – See 12-14-2009 response
03.09-02	Standard – See enclosed response
03.09-03	Standard – See enclosed response
03.09-04	Standard – See enclosed response revision
03.09-05	Standard – See 01-12-2010 response
03.09-06	Standard – See 12-14-2009 response
03.10-01	Standard – See 02-05-2010 response
03.11-01	Standard – See 12-14-2009 response

Attachments / Enclosures	Pages Included
None	

eRAI Tracking No. 0110

NuStart Qb Tracking No. 3950

NRC SER OI Number 03.09-02:

AP1000 DCD, Section 3.9.6.2.2 discusses valve testing in a section titled "Power-Operated Valve Operability Tests." For example, this AP1000 DCD section specifies that operability testing as required by 10 CFR 50.55a(b)(3)(ii) is performed on MOVs in the ASME OM Code IST Program to demonstrate that the MOVs are capable of performing their design-basis safety functions. In RAI 3.9.6-8, the NRC staff requested that the applicant discuss the application of JOG MOV Periodic Verification Study, MPR-2524-A, referenced in BLN COL FSAR Section 3.9.6.2.2, and the NRC safety evaluation on the JOG program, dated September 2006, for periodic verification of the design-basis capability of safety-related MOVs, and plans regarding other POVs. In its response to this RAI, the applicant stated that the BLN COL FSAR would be revised to address this issue. Revision 1 to BLN COL FSAR Section 3.9.6.3, "Relief Requests," states that the BLN IST program utilizes ASME OM Code Case OMN-1 (Revision 1), "Alternative Rules for the Preservice and Inservice Testing of Certain Electric Motor-Operated Valve Assemblies in Light Water Reactor Power Plants." Revision 1 to the BLN COL FSAR also states that the BLN IST program, as applicable, will follow the guidance in the JOG MOV Periodic Verification Program, including the recommendations in the NRC safety evaluation on the JOG MOV periodic verification program, dated September 2006, for periodic verification of the design-basis capability of safety-related MOVs. The applicant also stated that the BLN COL FSAR will be revised to address this issue as part of the response to RAI 3.9.6-11. The NRC accepts, with conditions, ASME OM Code Case OMN-1 (Revision 0) in RG 1.192, "Operation and Maintenance Code Case Acceptability, ASME OM Code." The NRC staff has not updated RG 1.192 at this time to accept Revision 1 to ASME OM Code Case OMN-1. Further, RAI 3.9.6-11 applies to POVs other than MOVs. [a] Therefore, the applicant needs to address RAI 3.9.6-8 with respect to MOVs. [b] The applicant needs to submit a request to apply an alternative to the ASME OM Code to use ASME OM Code Case OMN-1 (Revision 1). [c] Further, the applicant needs to update BLN COL FSAR Section 3.9.6 to be consistent with Revision 17 to the AP1000 DCD. For example, Revision 1 to the BLN COL FSAR refers to sentences in Section 3.9.6.2.2 of the AP1000 DCD that have been revised in Revision 17 to the DCD. This is Open Item 3.9-2.

<u>SNC Response</u>:

The RAI has three components, parts (a), (b) and (c) as indicated above.

(a) In BLN RAI 03.09.06-08, the NRC staff requested that the applicant discuss the application of JOG MOV Periodic Verification Study, MPR-2524-A, referenced in COL FSAR Subsection 3.9.6.2.2, and the NRC safety evaluation on the JOG program, dated September 2006, for periodic verification of the design-basis capability of safety-related MOVs, and plans regarding other POVs. In response to BLN RAI 03.09.06-08, it was stated that the COL FSAR would be revised to address this issue. The response also stated that Subsection 3.9.6.2.2 will be revised to indicate that MOV testing will be done using the rules of ASME OM Code Case OMN-I Revision 1, and as applicable, will follow the guidance of the JOG PV program, including recommendations in the NRC safety evaluation on the JOG PV program, dated September 2006, for periodic verification of the design-basis capability of safety-related MOVs. The RAI response also referred to the Westinghouse response to DCD RAI-SRP-3.9.6-CIB1-08. In the Westinghouse response to RAI-SRP-3.9.6-CIB1-08, and subsequently in DCD Revision 17, the DCD was revised to clarify the requirements for testing of power operated valves; the DCD clarifications are

intended to address all power-operated valves, including motor-operated valves. Additional clarifications regarding POV testing are provided in the Westinghouse responses to DCD RAIs OI-SRP-3.9.6-CIB1-02, OI-SRP-3.9.6-CIB1-03, and OI-SRP-3.9.6-CIB1-07. Therefore, no additional COLA changes are needed to address BLN RAI 03.09.06-08 for MOV testing.

The response to BLN RAI 03.09.06-08 also stated that Subsection 3.9.6.2.2 would be revised to clarify the additional periodic testing for other POVs (other than MOVs). The response referred to the Westinghouse response to DCD RAI-SRP-3.9.6-CIB1-03, and the response to BLN RAI 03.09.06-11. The response to BLN RAI 03.09.06-11 provided a discussion of POV (other than MOV) design basis testing as requested in BLN RAI 03.09.06-08, in addition to information added to DCD Subsection 3.9.6.2 regarding the POV testing program requirements as indicated in the Westinghouse response to DCD RAI-SRP-3.9.6-CIB1-03.

(b) FSAR Subsection 3.9.6.3 states that the IST Program described utilizes Code Case OMN-1, Revision 1, "Alternative Rules for the Preservice and Inservice Testing of Certain Electric Motor-Operated Valve Assemblies in Light Water Reactor Power Plants" (Reference 202). Code Case OMN-1 establishes alternate rules and requirements for preservice and inservice testing to assess the operational readiness of certain motor-operated valves, in lieu of the requirements set forth in ASME OM Code Subsection ISTC. Implementation of the alternative testing described in Revision 1 to Code Case OMN-1 will require request for relief, unless Code Case OMN-1, Revision 1, is approved by the NRC in Regulatory Guide 1.192, or the case has been incorporated into the ASME OM Code on which the IST program is based, and that Code is approved by reference in 10 CFR 50.55a(b). As specifically stated in the FSAR, use of Code Case OMN-1, Revision 1, will require submittal of a relief request to allow the use of the alternative testing for MOVs specified in the Code Case if, at the time of development of the preservice and inservice testing programs for implementation, the Code Case has not been approved for use by the NRC (in a revision to Regulatory Guide 1.192), or the Code Case has not been incorporated into the ASME OM Code Edition/Addenda by reference in 10 CFR 50.55a(b). Further, FSAR Subsection 3.9.6 states that a preservice test program, which identifies the required functional testing, is to be submitted to the NRC prior to performing the tests and following the start of construction. The inservice test program, which identifies requirements for functional testing, is to be submitted to the NRC prior to the anticipated date of commercial operation as described above.

ASME OM Code Case OMN-1, Revision 0 has been conditionally accepted in Regulatory Guide 1.192 (June 2003) with three (3) conditions. ASME Code Case OMN-1, Revision 1 essentially incorporates the conditions invoked by the NRC in Regulatory Guide 1.192 on ASME Code Case OMN-1, Revision 0. Therefore, Revision 1 should satisfy the requirements of the conditions placed on the use of OMN-1 Revision 0 in Regulatory Guide 1.192 and provides an equivalent and superior alternative to Revision 0 of the Code Case. Additional differences between Revision 0 and 1 of ASME Code Case OMN-1 are in the form of clarifications and the incorporation of the ability to utilize motor control center (MCC) testing. These additional differences between Revision 0 and Revision 1 of OMN-1 would be specifically addressed in a relief request submitted to the NRC for use of the alternatives of ASME Code Case OMN-1, Revision 1, if a relief request to utilize the alternatives of this Code Case is required.

FSAR Table 13.4-201 provides the implementation milestones for the preservice and inservice testing programs required by the ASME Code for Operation and Maintenance of Nuclear Power Plants (OM Code).

See the COLA changes identified in the Associated VEGP COL Application Revisions section below.

(c) A review of the COLA FSAR and DCD Revision 17 was done to identify any changes in the COLA required to conform to the DCD Revision 17 content. See the COLA changes identified in the Associated VEGP COL Application Revisions section below.

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

Associated VEGP COL Application Revisions:

(a) No COLA revisions associated with this response item.

(b) COLA Part 2, FSAR will be revised as follows:

(1) Revise the inserted paragraph of COLA Part 2, FSAR Chapter 3, Subsection 3.9.6.3, Relief Requests, from:

The IST Program described herein utilizes Code Case OMN-1, Revision 1, "Alternative Rules for the Preservice and Inservice Testing of Certain Electric Motor-Operated Valve Assemblies in Light Water Reactor Power Plants" (Reference 202). Code Case OMN-1 establishes alternate rules and requirements for preservice and inservice testing to assess the operational readiness of certain motor-operated valves, in lieu of the requirements set forth in ASME OM Code Subsection ISTC. Implementation of the program described in Code Case OMN-1 will require request for relief, unless Code Case OMN-1, Revision 1, is approved by the NRC in Regulatory Guide 1.192, or the case has been incorporated into the ASME OM Code on which the IST program is based, and that Code is approved in 10 CFR 50.55a(b).

To read:

The IST Program described herein utilizes Code Case OMN-1, Revision 1, "Alternative Rules for the Preservice and Inservice Testing of Certain Electric Motor-Operated Valve Assemblies in Light Water Reactor Power Plants" (Reference 202). Code Case OMN-1 establishes alternate rules and requirements for preservice and inservice testing to assess the operational readiness of certain motor-operated valves, in lieu of the requirements set forth in ASME OM Code Subsection ISTC. ASME OM Code Case OMN-1, Revision 0 has been conditionally accepted in Regulatory Guide 1.192 (June 2003) with three (3) conditions. ASME Code Case OMN-1, Revision 1 essentially incorporates the conditions invoked by the NRC in Regulatory Guide 1.192 on ASME Code Case OMN-1, Revision 0. Therefore, OMN-1 Revision 1 should satisfy the requirements of the conditions placed on the use of OMN-1 Revision 0 in Regulatory Guide 1.192, and thus provides an equivalent and superior alternative to that in Revision 0 of the Code Case. Additional differences between Revision 0 and 1 of ASME Code Case OMN-1 are in the form of clarifications and the incorporation of the ability to utilize motor control center (MCC) testing.

Implementation of the program described in Code Case OMN-1 will require request for relief, unless Code Case OMN-1, Revision 1, is approved by the NRC in Regulatory Guide 1.192, or the case has been incorporated into the ASME OM Code on which the IST program is based, and that Code is approved in 10 CFR 50.55a(b). The conditions placed upon, and the additional differences (described above) between Revision 0 and 1 of ASME Code Case OMN-1 would be specifically addressed in any relief request submitted to the NRC for use of the alternatives of ASME Code Case OMN-1, Revision 1, if a relief request to utilize the alternatives of this Code Case is required at program implementation.

(2) Revise Subsection 3.9.9, REFERENCES, as follows:

From:

201. Joint Owners Group (JOG) Motor Operated Valve Periodic Verification Program Summary, MPR 2524-A, ADAMS ML063490199, November 2006.

To read:

201. Not used.

(c) (1) COLA Part 2, FSAR Chapter 3, Subsection 3.9.6.2.2, will be revised as follows:

(a) Revise the third FSAR change item (for clarity) from:

Add the following as a new last paragraph under the heading "Manual/Power-Operated Valve Tests":

During valve exercise tests, the necessary valve obturator movement is determined while observing an appropriate direct indicator, such as indicating lights that signal the required changes of obturator position, or by observing other evidence or positive means, such as changes in system pressure, flow, level, or temperature that reflects change of obturator position.

To read:

Add the following paragraph after the fifth paragraph under the heading "Manual/Power-Operated Valve Tests":

During valve exercise tests, the necessary valve obturator movement is verified while observing an appropriate direct indicator, such as indicating lights that signal the required changes of obturator position, or by observing other evidence or positive means, such as changes in system pressure, flow, level, or temperature that reflects change of obturator position.

(b) Revise the fourth FSAR change item in Subsection 3.9.6.2.2 from:

Add the following at the end of the last sentence of the paragraph containing the subheading "Power-Operated Valve Operability Tests" in DCD Subsection 3.9.6.2.2:

, and for motor-operated valves the JOG MOV PV study (Reference 201) and ASME Code Case OMN-1, Revision 1 (Reference 202).

Table 13.4-201 provides milestones for the MOV program implementation.

To read:

Add the following sentence as the last sentence of the paragraph containing the subheading "Power-Operated Valve Operability Tests" in DCD Subsection 3.9.6.2.2:

Table 13.4-201 provides the milestones for the MOV program implementation.

(c) Delete the fifth FSAR change item in Subsection 3.9.6.2.2 that reads:

Revise the first sentence of the second paragraph under the paragraph with subheading "Power-Operated Valve Operability Tests" in DCD Subsection 3.9.6.2.2 to read as follows:

Static and dynamic testing with diagnostic measurements will be performed on these valves as described below.

(d) Revise the sixth FSAR change item in Subsection 3.9.6.2.2, as follows:

From:

Insert the following as the last sentence in the paragraph under the bulleted item titled "Risk Ranking" in DCD Subsection 3.9.6.2.2:

Guidance for this process is outlined in the JOG MOV PV Study, MPR-2524-A (Reference 201).

To read:

Insert the following as the last sentence in the paragraph under the bulleted item titled "Risk Ranking" in DCD Subsection 3.9.6.2.2:

Guidance for this process is outlined in the JOG MOV PV Study, MPR-2524-A

(e) Revise COLA Subsection 3.9.6.2.2 paragraph beginning with the subheading "Other Power-Operated Valve Operability Tests":

From:

Other Power-Operated Valve Operability Tests - Power-Operated valves other than active MOVs are exercised quarterly in accordance with ASME OM ISTC, unless justification is provided in the inservice testing program for testing these valves at other than Code mandated frequencies. Active and passive power-operated valves upon which operability testing may be performed are identified in DCD Table 3.9-16.

To read:

Other Power-Operated Valve Operability Tests - Power-Operated valves other than active MOVs are exercised quarterly in accordance with ASME OM ISTC, unless justification is provided in the inservice testing program for testing these valves at other than Code mandated frequencies.

(2) DCD Chapter 3, Subsection 3.9.6.2.2, will be revised in COLA Subsection 3.9.6.2.2 as follows to address COL Information Item 3.9-4:

NOTE: The following changes are in consideration of and in addition to the changes made by Westinghouse in their responses to DCD SER Open Items on Section 3.9.6.

(a) Insert new second sentence of the paragraph containing the subheading "Power-Operated Valve Operability Tests" in DCD Subsection 3.9.6.2.2 (immediately following the first sentence of the DCD paragraph) that reads:

The POVs include the motor-operated valves.

Such that the first two sentences under **Power-Operated Valve Operability Tests** would now read:

Power-Operated Valve Operability Tests - The safety-related, power-operated valves (POVs) are required by the procurement specifications to have the capabilities to perform diagnostic testing to verify the capability of the valves to perform their design basis safety functions. The POVs include the motor-operated valves.

(b) Add the left margin annotation "STD COL 3.9-4" for the above change.

eRAI Tracking No. 0110

NuStart Qb Tracking No. 3951

NRC SER OI Number 03.09-03:

In light of the weaknesses in the IST provisions in the ASME OM Code for quarterly MOV stroke-time testing, the NRC issued GL 96-05 to request that nuclear power plant licensees establish programs to assure the capability of safety-related MOVs to perform their design-basis functions over the long term. Further, the NRC revised 10 CFR 50.55a to require that nuclear power plant licensees supplement the MOV stroke-time testing specified in the ASME OM Code with a program to ensure that MOVs continue to be capable of performing their design-basis safety functions. In RAI 3.9.6-9, the NRC staff requested that the applicant clarify the paragraph titled "Active MOV Test Frequency Determination" in Section 3.9.6.2.2 of the BLN COL FSAR. In its response to this RAI, the applicant stated that the FSAR would be revised in response to this RAI. Revision 1 to BLN FSAR Section 3.9.6.2.2 indicates that the valve functional design and qualification requirements will be specified in procurement specifications. The FSAR references the guidance of the JOG MOV periodic verification program and the ASME OM Code Case OMN-1 requirements, following valve installation, to verify design-basis capability and to identify potential valve degradation impacts on functional margin. The FSAR states that the test frequency will be established using the guidance in ASME OM Code Case OMN-1. The NRC staff finds the provisions specified in Revision 1 to the BLN COL FSAR in response to this RAI to be acceptable, but not sufficient to fully describe the MOV Testing Operational Program. For example, several aspects of the RAI are not addressed in the FSAR, including: (a) use of ASME OM Code Case OMN-1 (Revision 0) as accepted in RG 1.192 in the BLN COL FSAR or request for an alternative to the ASME OM Code to implement ASME OM Code Case OMN-1 (Revision 1); (b) determination of MOV required capability for design-basis conditions on a periodic basis (such as by the JOG MOV periodic verification program); (c) determination of MOV output capability on a periodic basis; (d) how periodic testing objectively demonstrates continued MOV capability to open and/or close under design-basis conditions; (e) justification of approach for any IST intervals that exceed either 5 years or three refueling outages; and (f) how successful completion of the preservice and IST of MOVs demonstrates that the following criteria are met: (i) valve fully opens and/or closes as required by its safety function; (ii) adequate margin exists and includes consideration of diagnostic equipment inaccuracies, degraded voltage, control switch repeatability, load-sensitive MOV behavior, and margin for degradation; and (iii) maximum torque and/or thrust (as applicable) achieved by the MOV (allowing sufficient margin for diagnostic equipment inaccuracies and control switch repeatability) does not exceed the allowable structural and undervoltage motor capability limits for the individual parts of the MOV. This is Open Item 3.9-3.

SNC Response:

(a) See the response to NRC SER OI Number OI 03.09-02, (this letter) which discusses the need for a request for relief from the ASME OM Code to allow use of the alternatives of Code Case OMN-1, Revision 1, for testing of MOVs, and the COLA changes identified in the Associated VEGP COL Application Revisions section for that response. No additional COLA changes are required for this item.

(b) In BLN RAI 03.09.06-08, the NRC staff requested that the applicant discuss the application of JOG MOV Periodic Verification Study, MPR-2524-A, referenced in COL FSAR Subsection 3.9.6.2.2, and the NRC safety evaluation on the JOG program, dated September 2006, for periodic verification of the design-basis capability of safety-related MOVs, and plans regarding other POVs. In response to BLN RAI 03.09.06-08, it was

stated that the COL FSAR would be revised to address this issue. The response also stated that Subsection 3.9.6.2.2 will be revised to indicate that MOV testing will be done using the rules of ASME OM Code Case OMN-I Revision 1, and as applicable, will follow the guidance of the JOG PV program, including recommendations in the NRC safety evaluation on the JOG PV program, dated September 2006, for periodic verification of the design-basis capability of safety-related MOVs. The RAI response also referred to the Westinghouse response to DCD RAI-SRP-3.9.6-CIB1-08. In the Westinghouse response to RAI-SRP-3.9.6-CIB1-08, subsequently incorporated into DCD Revision 17, the DCD was revised to clarify the requirements for testing of power operated valves; the clarifications in the DCD are intended to address all power-operated valves, including motor-operated valves. Additional clarifications regarding POV testing are provided in the Westinghouse responses to DCD RAIs OI-SRP-3.9.6-CIB1-02, OI-SRP-3.9.6-CIB1-03, and OI-SRP-3.9.6-CIB1-07. The DCD change identified in the COL Application Revisions section in response to COL OI 03.09-02, item (c)(2)(a), further clarifies the applicability of the POV testing to MOVs. No additional COLA changes are required for this item.

(c) See the response to items (a) and (b) above; MOV design basis periodic testing will be done using the guidance from the JOG MOV program and Generic Letter 96-05, and ASME OM Code Case OMN-1, Revision 1. No additional COLA changes are required for this item.

(d) The testing of MOVs will be performed using the guidance provided through the JOG MOV Program (which utilizes MPR 2524-A and Generic Letter 96-05), and ASME OM Code Case OMN-1, Revision 1. Testing to the guidance provided in these documents provides the means to determine the MOVs current capability to perform under design-basis conditions, thereby providing reasonable assurance of the MOVs continued capability to function under design-basis conditions. See also the COLA changes identified in the COL Application Revisions section below for item (f). No additional COLA changes are required for this item.

(e) As stated in the DCD, the initial test frequency for POVs is based on applicable Code Cases or the ASME OM Code. The paragraph following subheading "Active MOV Test Frequency Determination" describes the process for establishment of MOV test frequency, and discusses evaluation of test data to be used in the process of defining a test frequency longer than the initial frequency specified in Code Case OMN-1. Test frequency changes are justified by the evaluation of the results of periodic testing, and as specified in the COLA, are not to exceed those intervals determined using the guidance provided by MPR 2524-A, and shall not exceed 10 years. See the COLA changes identified in the COL Application Revisions section below for item (f). No additional COLA changes are required for this item.

(f) The ASME OM Code provides requirements for preservice and inservice testing to assess the operational readiness of active electric motor-operated valve assemblies. The preservice and IST programs described in the FSAR, including the DCD which is incorporated by reference into the FSAR, meet the requirements of the ASME OM Code and 10 CFR 50.55a. The FSAR states that MOVs will be tested in accordance with Code Case OMN-1, Revision 1, and that the MOV design basis testing program as required by 10 CFR 50.55a will follow the guidance of Generic Letter 96-05 and the JOG MOV PV program and OMN-1. FSAR Subsection 3.9.6.2.2, in the paragraph including the subheading "Active MOV Test Frequency Determination" discusses the consideration of uncertainties in the design basis testing program. It indicates that uncertainties associated with performance of periodic verification tests and use of the test results (including those associated with measurement equipment and potential degradation mechanisms) are

addressed in the program. Uncertainties may be considered in the specification of acceptable valve setup parameters or in the interpretation of the test results (or a combination of both). Uncertainties affecting both valve function and structural limits are addressed. The criteria items (i), (ii), and (iii) identified in the RAI are included in the FSAR changes shown below. See the COLA changes identified in the Associated VEGP COL Application Revisions section below.

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

Associated VEGP COL Application Revisions:

(a) No additional COLA revisions are required for this item.

(b) No additional COLA revisions are required for this item.

(c) No additional COLA revisions are required for this item.

(d) No additional COLA revisions are required for this item.

(e) No additional COLA revisions are required for this item.

(f) COLA Subsection 3.9.6.2.2 will be revised as follows:

(1) Revise the COLA insert entitled "Active MOV Test Frequency Determination" from:

Active MOV Test Frequency Determination - The ability of a valve to meet its design basis functional requirements (i.e. required capability) is verified during valve qualification testing as required by procurement specifications. Requirements for qualification testing of power-operated active valves are included in procurement specifications. Valve qualification testing measures valve actuator output capability. Actuator output capability is compared to the valve's required capability defined in procurement specifications, establishing functional margin; that is, that increment by which the MOV's actual output capability exceeds the capability required to operate the MOV under design basis conditions. DCD Subsection 5.4.8 discusses valve functional design and qualification requirements. The inservice test frequency is determined as required by the ASME OM Code, Code Case OMN-1. Valve functional margin is evaluated to account for anticipated time-related changes in performance, accounting for applicable uncertainties in the analysis. If the evaluation shows that the functional margin will be reduced to less than established acceptance criteria within the established test interval, the test interval is decreased to less than the time for the functional margin to decrease below acceptance criteria. If there is not sufficient data to determine test frequency as described above, the test frequency is limited to not exceed two (2) refueling cycles or three (3) years, whichever is longer, until sufficient data exist to extend the test frequency. Maximum test frequency shall not exceed 10 years, and appropriate justification is provided for any increased test interval. This is to ensure that each MOV in the IST program will have adequate margin (including consideration for aging-related degradation) to remain operable until the next scheduled test, regardless of its risk categorization or safety significance. Uncertainties associated with performance of these periodic verification tests and use of the test results (including those associated with measurement equipment and potential degradation mechanisms) are addressed appropriately. Uncertainties may be considered in the specification of acceptable valve setup parameters or in the interpretation of the test results (or a combination of both). Uncertainties affecting both valve function and structural limits are addressed.

To read:

Active MOV Test Frequency Determination - The ability of a valve to meet its design basis functional requirements (i.e. required capability) is verified during valve qualification testing as required by procurement specifications. Valve qualification testing measures valve actuator actual output capability. The actuator output capability is compared to the valve's required capability

defined in procurement specifications, establishing functional margin; that is, that increment by which the MOV's actual output capability exceeds the capability required to operate the MOV under design basis conditions. DCD Subsection 5.4.8 discusses valve functional design and qualification requirements. The initial inservice test frequency is determined as required by ASME OM Code Case OMN-1, Revision 1 (Reference 202). The design basis capability testing of MOVs utilizes guidance from Generic Letter 96-05 and the JOG MOV Periodic Verification PV study, MPR 2524-A. Valve functional margin is evaluated following subsequent periodic testing to address potential time-related performance degradation, accounting for applicable uncertainties in the analysis. If the evaluation shows that the functional margin will be reduced to less than established acceptance criteria within the established test interval, the test interval is decreased to less than the time for the functional margin to decrease below acceptance criteria. If there is not sufficient data to determine test frequency as described above, the test frequency is limited to not exceed two (2) refueling cycles or three (3) years, whichever is longer, until sufficient data exist to extend the test frequency. Appropriate justification is provided for any increased test interval, and the maximum test interval shall not exceed 10 years. This is to ensure that each MOV in the IST program will have adequate margin (including consideration for aging-related degradation, degraded voltage, control switch repeatability, and load-sensitive MOV behavior) to remain operable until the next scheduled test, regardless of its risk categorization or safety significance. Uncertainties associated with performance of these periodic verification tests and use of the test results (including those associated with measurement equipment and potential degradation mechanisms) are addressed appropriately. Uncertainties may be considered in the specification of acceptable valve setup parameters or in the interpretation of the test results (or a combination of both). Uncertainties affecting both valve function and structural limits are addressed.

(2) Add the following paragraph following the paragraph with the heading "Active MOV Test Frequency Determination":

Maximum torque and/or thrust (as applicable) achieved by the MOV (allowing sufficient margin for diagnostic equipment inaccuracies and control switch repeatability) are established so as not to exceed the allowable structural and undervoltage motor capability limits for the individual parts of the MOV.

(3) Insert the following paragraph as the last paragraph under the sub-heading of "Power-Operated Valve Operability Tests" (following the previously added paragraph) and just before the sub-heading "Check Valve Tests" in DCD Subsection 3.9.6.2.2:

Successful completion of the preservice and IST of MOVs, in addition to MOV testing as required by 10 CFR 50.55a, demonstrates that the following criteria are met for each valve tested: (i) valve fully opens and/or closes as required by its safety function; (ii) adequate margin exists and includes consideration of diagnostic equipment inaccuracies, degraded voltage, control switch repeatability, load-sensitive MOV behavior, and margin for degradation; and (iii) maximum torque and/or thrust (as applicable) achieved by the MOV (allowing sufficient margin for diagnostic equipment inaccuracies and control switch repeatability) does not exceed the allowable structural and undervoltage motor capability limits for the individual parts of the MOV.

eRAI Tracking No. 0110

NuStart Qb Tracking No. 3952

NRC SER OI Number 03.09-04 supplemental request:

During NRC review of the response to this item, one change was requested to the identified COLA revisions. This change is included below.

SNC RESPONSE:

A comma is removed from the original response to this item as shown below. The additional revision to the COLA changes identified in the Associated VEGP COL Application Revisions section below will be included in a future revision of the COL application.

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

ASSOCIATED VEGP COL APPLICATION REVISIONS:

Original change per December 14, 2009, response:

(2) Revise the last sentence of the third bulleted paragraph following the paragraph in FSAR Section 3.9.6.2.2 containing subheading "Other Power-Operated Valve Operability Tests" from:

- Periodic static testing is performed, at a minimum on high risk (high safety significance) valves, to identify potential degradation, unless those valves are periodically cycled during normal plant operation, under conditions that meet or exceed the worst case operating conditions within the licensing basis of the plant for the valve, which would provide adequate periodic demonstration of AOV capability. If the margin between component capability and design-basis requirements has not been previously determined, dynamic testing will be performed to establish a baseline and to determine these margins.

To read:

- Periodic static testing is performed, at a minimum on high risk (high safety significance) valves, to identify potential degradation, unless those valves are periodically cycled during normal plant operation, under conditions that meet or exceed the worst case operating conditions within the licensing basis of the plant for the valve, which would provide adequate periodic demonstration of AOV capability. If required, based on valve qualification or operating experience, periodic dynamic testing is performed to re-verify the capability of the valve to perform its required functions.

This change will be further revised to read:

Periodic static testing is performed, at a minimum on high risk (high safety significance) valves, to identify potential degradation, unless those valves are periodically cycled during normal plant operation, under conditions that meet or exceed the worst case operating conditions within the licensing basis of the plant for the valve, which would provide adequate periodic demonstration of AOV capability. If required based on valve qualification or operating experience, periodic dynamic testing is performed to re-verify the capability of the valve to perform its required functions.