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SOUTHERN COMPANY
Energy to Serve Your World℠

September 26, 2005

Docket Nos.: 50-321
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NL-05-1691

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

Edwin I. Hatch Nuclear Plant
Response to Request for Additional Information (RAI) for the Fourth Ten-Year
Interval Inservice Testing Program Relief Requests for Pump and Valves

Ladies and Gentlemen:

On August 31, 2005, the Nuclear Regulatory Commission (NRC) electronically provided Southern Nuclear Operating Company (SNC) with Requests for Additional Information (RAIs) concerning the July 11, 2005 Plant Hatch Fourth Ten-Year Interval Inservice Testing Program Update submittal. All SNC correspondence relating to RR-P-1 dating April 20, 2005 (Issue 1, NL-05-0726), May 9, 2005 (Corrected Pages, NL-05-0847), June 28, 2005 (Issue 1, NL-05-1151), and July 11, 2005 (NL-05-1190) is hereby withdrawn. Issue 2 included in letters dated April 20, 2005 and June 28, 2005 is still applicable. In addition, SNC is hereby withdrawing Relief Request RR-P-10 since the request is no longer applicable with the withdrawal of RR-P-1.

Enclosure 1 is SNC's response to the RAIs. A snapshot of the NRC RAI precedes the SNC response. Enclosure 2 includes the corrected pages for the 4th Interval Inservice Testing Program. The updated pages included in Enclosure 2 incorporate the changes listed above and also incorporates the changes required in response to the RAIs. The pages listed in Enclosure 2 supersede the pages included in the submittal dated July 11, 2005 (NL-05-1190).

This letter contains no NRC commitments. If you have any questions, please advise.

Sincerely,

H. L. Sumner, Jr.

HLS/JL/daj

Enclosures: 1. SNC Response to RAIs
2. 4th Interval Inservice Testing Program Corrected Pages

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Edwin I. Hatch Nuclear Plant
Response to Request for Additional Information (RAI) for the Fourth Ten-Year Interval
Inservice Testing Program Relief Requests for Pump and Valves

Enclosure 1

NRC Question:

Pump Relief Request RR-P-2

RAI 1: The American Society of Mechanical Engineers Code for Operation and Maintenance (OM Code) Edition 2001 thru 2003 Addenda, Subsection ISTB, requires that all pumps be categorized as either Group A or Group B. The Standby Liquid Control pumps are normally Group B pumps. ISTB only requires that Group B pump vibration be measured during comprehensive pump testing every 2 years. The licensee is measuring vibration quarterly without addressing Group A, Group B, or comprehensive pump tests. Please explain and clarify.

SNC Response to RAI 1:

SNC has revised RR-P-2 to indicate that the Standby Liquid Control Pumps are Group B pumps.

NRC Question:

RAI 2: In the section entitled "Reason for Request," the licensee does not provide the reasoning for not using a vibration measuring transducer that meets the OM Code specified requirements. The availability of instruments to cover the range from 2 Hz through 1000 Hz might have been impractical a decade ago, however, these instruments are readily available from several vendors today. Please discuss your reasons for determining the impracticality of meeting this OM Code requirement today.

SNC Response to RAI 2:
SNC has revised RR-P-2 to correct a grammatical error. The equipment response range of the proposed vibration measuring equipment is "2.5 to 1000 Hz" instead of ≤ 5 Hz to ≥ 1000 Hz.

NRC Question:

RAI 3: In the section entitled "Reason for Request," Item 1 on page 7-3, states "Vibration monitoring equipment with a calibration accuracy of at least ± 5% over a frequency response range of ≤ 5Hz to ≥ 1,000 Hz will be utilized for IST (Inservice Testing) OM Code Edition 2001 thru 2003 Addenda, Subsection ISTB." This does not provide any range. Please specify the actual range of the instruments being used to measure vibration.

SNC Response to RAI 3:
See response to RAI 2.

NRC Question:

RAI 4: In the section entitled "Reason for Request," please clarify Item 7 and page 7-3a.

SNC Response to RAI 4:
Item 7 was intended to be a summary of the reasons contained in Items 1-6. Item 7 has been deleted for clarity.

NRC Question:

Pump Relief Request RR-P-3

RAI 5: The OM Code Edition 2001 thru 2003 Addenda, Subsection ISTB requires that all pumps be categorized as either Group A or Group B. The Residual Heat Removal (RHR) pumps are Group A pumps. The Table ISTB-3500-1 required pressure instrument accuracy for Group A is ± 2 percent and for Comprehensive Pump Test is ± ½ percent, whereas the licensee instrument accuracy is identified as ± 2 percent. Please explain and clarify.

SNC Response to RAI 5:
SNC has revised RR-P-3 to indicate that the RHR pumps are Group A pumps. RR-P-3 has also been revised to define that the request applies to Group A pump testing. SNC will utilize pressure indicators that meet the OM Code range and accuracy requirements for the Comprehensive and Preservice pump test.

NRC Question:

Pump Relief Request RR-P-6

RAI 6: The OM Code Edition 2001 thru 2003 Addenda, Subsection ISTB requires that all pumps be categorized as either Group A or Group B. The core spray pumps are normally Group B pumps. Under "Requirement" and "Reason for Request," the licensee states the pumps are identified as Group A pump. Please explain and clarify.

SNC Response to RAI 6:
SNC has revised RR-P-6 to indicate that the Core Spray pumps are Group B pumps. RR-P-6 has also been revised to define that the request applies to Group B pump testing. SNC will utilize pressure indicators that meet the OM Code range and accuracy requirements for the Comprehensive and Preservice pump test.

NRC Question:

Pump Relief Request RR-P-7

RAI 7: The OM Code Edition 2001 thru 2003 Addenda, Subsection ISTB requires that all pumps be categorized as either Group A or Group B. Under "Reason for Request," these pumps are stated as Group A pumps. High Pressure Coolant Injection (HPCI) pumps are Group B pumps. The Table ISTB-3500-1 required pressure instrument accuracy for Group B is ± 2 percent and for Comprehensive Pump test is ± ½ percent, whereas the licensee instrument accuracy is identified as ± 2 percent. Please explain and clarify.

SNC Response to RAI 7:
SNC has revised RR-P-7 to indicate that HPCI pumps are Group B pumps. RR-P-7 has also been revised to define that the request applies to Group B pump testing. SNC will utilize pressure indicators that meet the OM Code range and accuracy requirements for the Comprehensive and Preservice pump test.

NRC Question:

Pump Relief Request RR-P-8

RAI 8: The OM Code Edition 2001 thru 2003 Addenda, Subsection ISTB requires that all pumps to be categorized as either Group A or Group B. Under "Requirement" and "Proposed Alternative and Basis," these pumps are identified as Group A pumps. HPCI pumps are normally Group B pumps. Please explain and clarify.

SNC Response to RAI 8:
SNC has revised RR-P-8 to indicate that HPCI pumps are Group B pumps. RR-P-8 has also been revised to define that the request applies to Group B, Comprehensive, and Preservice pump testing.

NRC Question:

Pump Relief Request RR-P-10

RAI 9: The OM Code Edition 2001 thru 2003 Addenda, Subsection ISTB, requires that all pumps be categorized as either Group A or Group B. HPCI pumps are normally Group B pumps. Group B pumps vibration are measured during comprehensive pump testing. Please provide details which test is being performed and also provide historical data of the HPCI pump vibration data.

SNC Response to RAI 9:
RR-P-10 was based upon the assumption that RR-P-1 would be approved for the 4th Interval Inservice Testing Program. Since these pumps will be tested as Group B pumps and vibration monitoring is required only once every two years during the Comprehensive Pump Test, this request is no longer needed. SNC is withdrawing RR-P-10.

NRC Question:

Pump Relief Request RR-P-11

RAI 10: The OM Code Edition 2001 thru 2003 Addenda, Subsection ISTB, requires that all pumps to be categorized as either Group A or Group B. The RHR pumps are Group A and Core Spray pumps are Group B pumps. The Table ISTB-3500-1 required pressure instrument accuracy for Group A and Group B is ± 2 percent and for Comprehensive Pump test is ± ½ percent, whereas the licensee instrument accuracy is identified as ± 2 percent accuracy. Please explain and clarify.

SNC Response to RAI 10:
SNC has revised RR-P-11 to indicate that RHR pumps are Group A pumps and Core Spray pumps are Group B pumps. RR-P-11 has also been revised to define that the request applies only to the RHR Group A and Core Spray Group B test. SNC will utilize pressure indicators that meet the OM Code range and accuracy requirements for the Comprehensive and Preservice pump test.

NRC Question:

Pump Relief Request RR-P-12

RAI 11: The OM Code Edition 2001 thru 2003 Addenda, Subsection ISTB, requires that all pumps be categorized as either Group A or Group B. On Page 7-2f, the Standby Diesel Service Water pump 2P41-C002 is identified as a Group A pump, whereas actually it is a Group B pump. Please explain and clarify.

SNC Response to RAI 11:
SNC has revised RR-P-12 to indicate that Standby Diesel Service Water pump is a Group B pump. RR-P-12 has also been revised to define that the request applies to Group B, Comprehensive, and Preservice pump testing.

NRC Question:

Relief Requests RR-V-6 and RR-V-7

RAI 12: OM Code Edition 2001 thru 2003 Addenda, Subsection ISTB requires that check valves in a sample disassembly program that are not capable of being full-stroke exercised, have failed, or have unacceptable degraded valve internals shall have the cause of failure analyzed and the condition corrected and that other check valves in the sample group that may also be affected by this failure mechanism be examined or tested during the same refueling outage to determine the condition of internal components and their ability to function. Please address how this OM Code requirement will be implemented for valve groups that are inspected outside of refueling outages during normal operation.

SNC Response to RAI 12:
SNC has revised RR-V-6 to indicate the following:
Any check valve that is not capable of full-stroke movement (i.e., due to binding), has failed, or has unacceptably degraded valve internals shall have the cause of failure analyzed and the condition corrected prior to return to service. If the group contains more than one check valve, valves in the same group that may also be affected by this failure mechanism shall be inspected during the refueling outage or within 180 days if the initial valve was disassembled during normal plant operation. Additionally, an evaluation shall be performed to document justification for the continued operational readiness for each valve during this 180 day time period, if applicable. The evaluation shall include consideration of other tests or examinations, (e.g., flow exercising, leak testing) and their frequency, that can be performed to support continued operational readiness until such time that the other valve(s) in the group can be inspected. This 180 day time period will allow for adequate planning, scheduling and parts procurement to support efficient inspection of the other valves in the group. In no instance shall the inspection be deferred beyond the next refueling outage.

This is not applicable to RR-V-7 since RR-V-7 applies only to groups that consist of one valve. Scope expansion is not required.

NRC Question:

RAI 13: Please verify that check valve inspections will be conducted on a refueling outage frequency (i.e, presently every 24 months).

SNC Response to RAI 13:

RR-V-6 and RR-V-7 have been revised to indicate that check valve inspections will be conducted on a 24-month frequency.

NRC Question:

RAI 14: Relief request RR-V-6 states that the alternative is a resubmittal of previously approved relief request RR-V-17. Valves 1/2E41-F019, 1/2P41-F064, and 1/2P41-F065 are relatively large diameter valves and were not previously approved in RR-V-17. The NRC safety evaluation associated with RR-V-17 denied relief for similar large diameter check valves due to concerns about the leaktight reliability of the associated isolation valves. Please address the isolation capability and leakage determination capability available prior to disassembly of the above valves.

SNC Response to RAI 14:

SNC has revised RR-V-6 to remove check valves 1/2E41-F019, 1/2P41-F064, and 1/2 P41-F065 from the request. SNC will submit another request at a later date as applicable for the subject check valves.

NRC Question:

RAI 15: Please confirm that the information contained in your response to request for additional information associated with RR-V-18 (Southern Nuclear Operating Company letter dated September 12, 2003) is still accurate for the fourth 10-year interval.

SNC Response to RAI 15:
SNC has verified that the information associated with RR-V-18 (letter dated September 12, 2003) is still accurate for the Fourth 10-Year Interval.

Additional Response for Pump IST

The IST Pump Test Tables included in the IST Program have been updated to define the applicable IST for each pump dependent upon code category. Each pump relief request has also been revised to define which test (i.e. Group A, Group B, Comprehensive, or Preservice Test) that the request applies to.

Edwin I. Hatch Nuclear Plant
Response to Request for Additional Information (RAI) for the Fourth Ten-Year Interval
4th Interval Inservice Testing Program Corrected Pages

Enclosure 2

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3.0 INSERVICE TESTING OF PUMPS

3.1 GENERAL

This IST program was developed to comply with the requirements of 10 CFR 50.55a(f) which delineate the testing requirements for ASME Class 1, 2, and 3 pumps. The Code of record required by 10 CFR 50.55a(b)(3) for 4th Interval pump IST is the ASME OM Code-2001 Edition with Addenda through OMb-2003. The supplemental guidance of NRC NUREG-1482, Revision 1 has been applied to the extent practicable. For pumps which are within the scope of IST, as stipulated in 10 CFR 50.55a, where specific Code requirements cannot be met, relief has been requested from the specific Code requirements.

As required by OM Code, ISTB-1300, pumps within the scope of this program shall be categorized as either Group A or Group B pumps.

Group A pumps are defined as pumps that are operated continuously or routinely during normal operation, cold shutdown, or refueling operation.

Group B pumps are defined as pumps in standby systems that are not operated routinely except for testing.

Group A and Group B pump testing is required quarterly. In addition, to the quarterly Group A or Group B pump tests, the OM Code imposes a biennial Comprehensive Pump Test and a Preservice Pump Test for pumps that are overhauled or replaced. The IST Program Pump Tables list the parameters measured during Group A, Group B, and Comprehensive Pump Testing.

Preservice Testing is equivalent to Comprehensive Pump Testing, except Preservice Testing requires the development of a five point pump curve for centrifugal and vertical line shaft pumps in which flow and differential pressure is measured. Vibration measurements are only required to be taken at the reference value(s).

The Preservice Test for Standby Liquid Control pumps is equivalent to the Comprehensive Pump Test.

3.2 SCOPE

Safety-related ASME Class 1, 2, and 3 pumps meeting the criteria of the ASME OM Code and falling under the Regulatory Position of Regulatory Guide 1.26 (September 1974) are included within the scope of this program. Special scope features of the Hatch IST Program are discussed below.

It is recognized that 10 CFR 50 Appendix A, GDC-1, and Appendix B, Criterion XI intend that all pumps necessary for safe operation of the plant be tested to demonstrate that they will perform satisfactorily in service. This testing is to be performed to a level commensurate with the function of the pump. This testing is generally performed per the requirements of the plant Technical Specifications or other requirements. In cases where Code requirements are impractical for certain pumps, or an alternate testing method is considered an improvement over OM Code requirements, a relief request has been developed. Pump relief requests are located under a separate tab.

3.2 Scope (Cont.)

No credit is taken in any of the accident analyses for the RCIC system (re: NRC SER dated 8/21/97). Therefore, the RCIC pumps have been included in this Program to provide a readily accessible, documented method of testing. This testing will be performed in a manner similar to the OM Code testing and should adequately detect degradation. Subsequently, relief requests are not considered to be required.

The Diesel Generator Fuel Oil Transfer Pumps are not ASME classed components and are not included within the scope of Regulatory Guide 1.26 (September 1974). These pumps have been included in this Program to provide a readily accessible, documented method of testing. This testing will be performed in a method similar to that found in the OM Code, and should adequately detect degradation in these particular pumps.

The Spent Fuel Pool Cooling Pumps have not been included in this Program because they are not safety-related. Credit is taken in the FSAR for Plant Service Water as the safety-grade makeup source to the spent fuel pool and the RHR system is used as the backup cooling source.

The Core Spray Jockey Pumps have not been included in this Program because they are not considered to be safety-related.

HNP-1 PUMP TESTING TABLES
Quarterly Group A and Group B Pump Tests

Pump ID	Description/Group	P&ID/ Coord	Code Class	Test Parameters	Test Frequency	RR/Remarks
1C41-C001A	Standby Liquid Control (Positive Displacement)	H-16061 E-6	2	Pd	Qtr	N/A
1C41-C001B	Group B	H-16061 F-6		Q	Qtr	Note 1
				V	N/A	N/A
				N	NA	NA
				ΔP	NA	NA
1E11-C002A	Residual Heat Removal (Centrifugal)	H-16330 H-9	2	Pd	NA	RR-P-3
1E11-C002B	Group A	H-16329 H-3		Q	Qtr	RR-P-4
1E11-C002C		H-16330 H-11		V	Qtr	N/A
1E11-C002D		H-16329 H-1		N	NA	NA
				ΔP	Qtr	RR-P-3 RR-P-11
1E11-C001A	RHR Service Water (Vertical Line Shaft)	D-11004 A-7	3	Pd	NA	NA
1E11-C001B	Group A	D-11004 D-7		Q	Qtr	N/A
1E11-C001C		D-11004 C-7		V	Qtr	RR-P-5
1E11-C001D		D-11004 E-7		N	NA	NA
				ΔP	Qtr	Note 2

HNP-1 PUMP TESTING TABLES
Quarterly Group A and Group B Pump Tests

Pump ID	Description/Group	P&ID Coord	Code Class	Test Parameter	Test Frequency	RR/Remarks
1E21-C001A 1E21-C001B	Core Spray (Centrifugal) Group B	H-16331 H-9 H-16331 H-10	2	Pd	NA	RR-P-6
				Q	Qtr	N/A
				V	N/A	N/A
				N	NA	NA
				ΔP	Qtr	RR-P-6 RR-P-11
1E41-C001	High Pressure Coolant Injection (Centrifugal) Group B	H-16333 E-8	2	Pd	NA	N/A
				Q	Qtr	RR-P-8
				V	N/A	N/A
				N	Qtr	N/A
				ΔP	Qtr	RR-P-7
1E51-C001 (Note 3)	Reactor Core Isolation Cooling (Centrifugal) Group B (Augmented)	H-16335 D-6	2	Pd	NA	Note 10
				Q	Qtr	Note 5
				V	N/A	N/A
				N	Qtr	Note 11
				ΔP	Qtr	Note 4

HNP-1 PUMP TESTING TABLES

Quarterly Group A and Group B Pump Tests

Pump ID	Description/Group	P&ID/ Coord	Code Class	Test Parameter	Test Frequency	RR/Remarks
1P41-C001A	Plant Service Water (Vertical Line Shaft)	D-11001 F-2	3	Pd	NA	NA
1P41-C001B	Group A	D-11001 F-5		Q	Qtr	N/A
1P41-C001C		D-11001 F-3		V	Qtr	RR-P-5
1P41-C001D		D-11001 F-6		N	NA	NA
				ΔP	Qtr	Note 2
1Y52-C001A	Diesel Fuel Oil Transfer	H-11037 NA	NA	Pd	6 months	NA
1Y52-C001B	(Vertical line shaft) (Note 6)	H-11037 NA		Q	6 months	Note 7, 9
1Y52-C001C	Group B (Augmented)	H-11037 NA		V	6 months	Note 8, 9
1Y52-C101A		H-11037 NA		N	NA	NA
1Y52-C101B		H-11037 NA		ΔP	6 months	NA
1Y52-C101C		H-11037 NA				

HNP-1 PUMP TESTING TABLES
Biennial Comprehensive Pump Tests

Pump ID	Description/Group	P&ID/ Coord	Code Class	Test Parameters	Test Frequency	RR/Remarks
1C41-C001A	Standby Liquid Control (Positive Displacement)	H-16061 E-6	2	Pd	Biennially	N/A
1C41-C001B	Group B	H-16061 F-6		Q	Biennially	Note 1
				V	Biennially	RR-P-2
				N	NA	NA
				ΔP	NA	NA
1E11-C002A	Residual Heat Removal (Centrifugal)	H-16330 H-9	2	Pd	NA	N/A
1E11-C002B	Group A	H-16329 H-3		Q	Biennially	RR-P-4
1E11-C002C		H-16330 H-11		V	Biennially	N/A
1E11-C002D		H-16329 H-1		N	NA	NA
				ΔP	Biennially	NA
1E11-C001A	RHR Service Water (Vertical Line Shaft)	D-11004 A-7	3	Pd	NA	NA
1E11-C001B	Group A	D-11004 D-7		Q	Biennially	N/A
1E11-C001C		D-11004 C-7		V	Biennially	RR-P-5
1E11-C001D		D-11004 E-7		N	NA	NA
				ΔP	Biennially	Note 2

HNP-1 PUMP TESTING TABLES
Biennial Comprehensive Pump Tests

Pump ID	Description/Group	P&ID Coord	Code Class	Test Parameter	Test Frequency	RR/Remarks
1E21-C001A 1E21-C001B	Core Spray (Centrifugal) Group B	H-16331 H-9 H-16331 H-10	2	Pd	NA	NA
				Q	Biennially	N/A
				V	Biennially	N/A
				N	NA	NA
				ΔP	Biennially	NA
1E41-C001	High Pressure Coolant Injection (Centrifugal) Group B	H-16333 E-8	2	Pd	NA	N/A
				Q	Biennially	RR-P-8
				V	Biennially	NA
				N	Biennially	N/A
				ΔP	Biennially	N/A
1E51-C001 (Note 3)	Reactor Core Isolation Cooling (Centrifugal) Group B (Augmented)	H-16335 D-6	2	Pd	NA	Note 10
				Q	Biennially	Note 5
				V	Biennially	N/A
				N	Biennially	Note 11
				ΔP	Biennially	Note 4

HNP-1 PUMP TESTING TABLES
Biennial Comprehensive Pump Tests

Pump ID	Description/Group	P&ID/ Coord	Code Class	Test Parameter	Test Frequency	RR/Remarks
1P41-C001A	Plant Service Water (Vertical Line Shaft)	D-11001 F-2	3	Pd	NA	NA
1P41-C001B	Group A	D-11001 F-5		Q	Biennially	N/A
1P41-C001C		D-11001 F-3		V	Biennially	RR-P-5
1P41-C001D		D-11001 F-6		N	NA	NA
				ΔP	Biennially	Note 2

HNP-2 PUMP TESTING TABLES

Quarterly Group A and Group B Pump Tests

Pump ID	Description/Group	P&ID/ Coord	Code Class	Test Parameter	Test Frequency	RR/Remarks
2C41-C001A	Standby Liquid Control (Positive Displacement)	H-26009 F-5	2	Pd	Qtr	N/A
2C41-C001B	Group B	H-26009 G-5		Q	Qtr	Note 1
				V	N/A	N/A
				N	NA	NA
				ΔP	NA	NA
2E11-C002A	Residual Heat Removal (Vertical Line Shaft)	H-26015 H-8	2	Pd	NA	RR-P-3
2E11-C002B	Group A	H-26014 H-3		Q	Qtr	RR-P-4
2E11-C002C		H-26015 H-9		V	Qtr	N/A
2E11-C002D		H-26014 H-2		N	NA	NA
				ΔP	Qtr	RR-P-3 RR-P-11
2E11-C001A	RHR Service Water (Vertical Line Shaft)	H-21039 B-4	3	Pd	NA	NA
2E11-C001B	Group A	H-21039 F-4		Q	Qtr	N/A
2E11-C001C		H-21039 D-3		V	Qtr	RR-P-5
2E11-C001D		H-21039 G-3		N	NA	NA
				ΔP	Qtr	Note 2

HNP-2 PUMP TESTING TABLES
Quarterly Group A and Group B Pump Tests

Pump ID	Description/Group	P&ID/ Coord	Code Class	Test Parameter	Test Frequency	RR/Remarks
2E21-C001A 2E21-C001B	Core Spray (Vertical Line Shaft) Group B	H-26018 F-7 H-26018 F-9	2	Pd	NA	RR-P-6
				Q	Qtr	N/A
				V	N/A	N/A
				N	NA	NA
				ΔP	Qtr	RR-P-6 RR-P-11
2E41-C001	High Pressure Coolant Injection (Centrifugal) Group B	H-26021 D-7	2	Pd	NA	N/A
				Q	Qtr	RR-P-8
				V	N/A	N/A
				N	Qtr	N/A
				ΔP	Qtr	RR-P-7
2E51-C001 (Note 3)	Reactor Core Isolation Cooling (Centrifugal) Group B (Augmented)	H-26024 C-6	2	Pd	NA	Note 10
				Q	Qtr	Note 5
				V	N/A	N/A
				N	Qtr	Note 11
				ΔP	Qtr	Note 4

HNP-2 PUMP TESTING TABLES
Quarterly Group A and Group B Pump Tests

Pump ID	Description/Group	P&ID/ Coord	Code Class	Test Parameter	Test Frequency	RR/Remarks
2P41-C001A	Plant Service Water (Vertical Line Shaft)	H-21033 B-2	3	Pd	NA	NA
2P41-C001B	Group A	H-21033 E-2		Q	Qtr	N/A
2P41-C001C		H-21033 C-2		V	Qtr	RR-P-5
2P41-C001D		H-21033 G-2		N	NA	NA
				ΔP	Qtr	Note 2
2P41-C002	Standby Diesel Gen. Service Water	H-21033 J-2	3	Pd	NA	NA
	(Vertical Line Shaft) Group B			Q	Qtr	RR-P-12
				V	N/A	N/A
				N	NA	NA
				ΔP	Qtr	Note 2
2Y52-C001A	Diesel Fuel Oil Transfer (Vertical Line Shaft)	H-21074 (F-10)	NA	Pd	6 months	NA
2Y52-C001C	(Note 6) Group B	H-21074 (H-10)		Q	6 months	Note 7, 9
2Y52-C101A	(Augmented)	H-21074 (F-10)		V	6 months	Note 8, 9
2Y52-C101C		H-21074 (H-10)		N	NA	NA
				ΔP	6 months	NA

HNP-2 PUMP TESTING TABLES
Biennial Comprehensive Pump Tests

Pump ID	Description/Group	P&ID/ Coord	Code Class	Test Parameter	Test Frequency	RR/Remarks
2C41-C001A	Standby Liquid Control (Positive Displacement)	H-26009 F-5	2	Pd	Biennially	N/A
2C41-C001B	Group B	H-26009 G-5		Q	Biennially	Note 1
				V	Biennially	RR-P-2
				N	NA	NA
				ΔP	NA	NA
2E11-C002A	Residual Heat Removal (Vertical Line Shaft)	H-26015 H-8	2	Pd	NA	N/A
2E11-C002B	Group A	H-26014 H-3		Q	Biennially	RR-P-4
2E11-C002C		H-26015 H-9		V	Biennially	N/A
2E11-C002D		H-26014 H-2		N	NA	NA
				ΔP	Biennially	N/A
2E11-C001A	RHR Service Water (Vertical Line Shaft)	H-21039 B-4	3	Pd	NA	NA
2E11-C001B	Group A	H-21039 F-4		Q	Biennially	N/A
2E11-C001C		H-21039 D-3		V	Biennially	RR-P-5
2E11-C001D		H-21039 G-3		N	NA	NA
				ΔP	Biennially	Note 2

HNP-2 PUMP TESTING TABLES
Biennial Comprehensive Pump Tests

Pump ID	Description/Group	P&ID/ Coord	Code Class	Test Parameter	Test Frequency	RR/Remarks
2E21-C001A 2E21-C001B	Core Spray (Vertical Line Shaft) Group B	H-26018 F-7 H-26018 F-9	2	Pd	NA	NA
				Q	Biennially	N/A
				V	Biennially	N/A
				N	NA	NA
				ΔP	Biennially	NA
2E41-C001	High Pressure Coolant Injection (Centrifugal) Group B	H-26021 D-7	2	Pd	NA	N/A
				Q	Biennially	RR-P-8
				V	Biennially	N/A
				N	Biennially	N/A
				ΔP	Biennially	N/A
2E51-C001 (Note 3)	Reactor Core Isolation Cooling (Centrifugal) Group B (Augmented)	H-26024 C-6	2	Pd	NA	Note 10
				Q	Biennially	Note 5
				V	Biennially	N/A
				N	Biennially	Note 11
				ΔP	Biennially	Note 4

HNP-2 PUMP TESTING TABLES
Biennial Comprehensive Pump Tests

Pump ID	Description/Group	P&ID/ Coord	Code Class	Test Parameter	Test Frequency	RR/Remarks
2P41-C001A	Plant Service Water (Vertical Line Shaft)	H-21033 B-2	3	Pd	NA	NA
2P41-C001B	Group A	H-21033 E-2		Q	Biennially	N/A
2P41-C001C		H-21033 C-2		V	Biennially	RR-P-5
2P41-C001D		H-21033 G-2		N	NA	NA
				ΔP	Biennially	Note 2
2P41-C002	Standby Diesel Gen. Service Water (Vertical Line Shaft) Group B	H-21033 J-2	3	Pd	NA	NA
				Q	Biennially	RR-P-12
				V	Biennially	RR-P-9
				N	NA	NA
				ΔP	Biennially	Note 2

7.0 PUMP RELIEF REQUEST LOG

Relief Request	Component	Status *
RR-P-1	All Pumps	Withdrawn
RR-P-2	1/2C41-C001A&B	Submitted to the NRC for 4th 10 Year IST Interval
RR-P-3	1/2E11-C002A,B,C&D	Submitted to the NRC for 4th 10 Year IST Interval
RR-P-4	1/2E11-C002A,B,C&D	Submitted to the NRC for 4th 10 Year IST Interval
RR-P-5	1/2E11-C001A,B,C&D 1/2P41-C001A,B,C&D	Submitted to the NRC for 4th 10 Year IST Interval
RR-P-6	1/2E21-C001A&B	Submitted to the NRC for 4th 10 Year IST Interval
RR-P-7	1/2E41-C001	Submitted to the NRC for 4th 10 Year IST Interval
RR-P-8	1/2E41-C001	Submitted to the NRC for 4th 10 Year IST Interval
RR-P-9	2P41-C002	Submitted to the NRC for 4th 10 Year IST Interval
RR-P-10	1/2E41-C001	Withdrawn
RR-P-11	1/2E11-C002A,B,C&D 1/2E21-C001A&B	Submitted to the NRC for 4th 10 Year IST Interval
RR-P-12	2P41-C002	Submitted to the NRC for 4th 10 Year IST Interval

* Status as result of latest revision to IST Program.

Notes:

(1) With the exception of RR-P-1, all pump Relief Request were included in the Third 10 Year Interval IST Program with the majority receiving NRC approval via SER dated 4/12/96. RR-P-11 was approved by SER dated 5/4/99 and RR-P-12 was approved by SER dated 12/7/98.

WITHDRAWN

SOUTHERN NUCLEAR OPERATING COMPANY
IST PROGRAM
PROPOSED ALTERNATIVE IN ACCORDANCE WITH 10 CFR 50.55a(a)(3)(ii)
RR-P-2, Version 1.0

PLANT/UNIT: Edwin I Hatch Nuclear Plant/Unit 1 and 2.

INTERVAL: 4th Interval beginning January 1, 2006 and ending December 31, 2015.

COMPONENTS AFFECTED: 1C41-C001A & B (Positive Displacement Pumps) – Group B
2C41-C001A & B (Positive Displacement Pumps) – Group B

CODE EDITION AND ADDENDA: ASME OM Code-2001 Edition with Addenda through OMb-2003

REQUIREMENTS: ISTB-3510(e) - The frequency response range of the vibration measuring transducers and their readout system shall be from one-third minimum pump shaft rotational speed to at least 1000 Hz. This corresponds to a required range of 2.1 Hz to at least 1000 Hz for each applicable pump.

REASON FOR REQUEST: This alternative is a re-submittal of NRC approved 3rd Interval relief request RR-P-1 that was based on the ASME OM Code-1990 Edition, no addenda. This 4th Interval request for relief, RR-P-2, is based on the ASME OM Code-2001 Edition with Addenda through OMb-2003. There have been no substantive changes to this alternative, to the OM Code requirements or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions. (See References for SER date and TAC numbers associated with RR-P-1.)

The Standby Liquid Control (SBLC) Pumps operate at 370 RPM (6.2 Hz); therefore, the instrument frequency response range of the Plant Hatch IST Program instrumentation does not satisfy the code requirement.

In lieu of the requirements of ISTB-3510(e), the vibration measuring instrument frequency response range utilized for the Standby Liquid Control Pumps will be as described below.

1. Vibration monitoring equipment with a calibration accuracy of at least ±5% over a frequency response range of 2.5 Hz to 1,000 Hz will be utilized for IST.

2. These lower frequency response limits result from high-pass filters which eliminate low-frequency elements associated with the input signal from the integration process. These filters prevent low frequency electronic noise from distorting vibration readings thus any actual vibration occurring at frequencies < 2.5 Hz is filtered out.

3. The SBLC pumps are Union Pump Company reciprocating pumps. The subject pumps utilize roller bearings instead of sleeve bearings. Sleeve bearings can exhibit vibration at subsynchronous frequencies when a condition of oil whirl is present. However, oil whirl does not occur in roller or ball bearings.

RR-P-2 (Cont.)

4. Roller and ball bearing degradation symptoms typically occur at 1X (6.2 Hz) shaft rotational frequency and greater. Therefore, vibration measurements at frequencies less than shaft speed would not provide meaningful data relative to degradation of the pump bearings.

5. The SBLC pumps are standby pumps only. They are only operated during Technical Specification Surveillance and Inservice Testing which results in very little run time. In the unlikely event that the system is required to perform its safety function, the pump run time would be from 19 to 74 minutes to exhaust the volume of the sodium pentaborate storage tank.

6. In addition to the IST vibration monitoring program, these pumps are included in the site maintenance department vibration program which has the capability to perform spectral analysis. The maintenance vibration program will also be utilized to analyze any IST vibration data which places the pumps in the ALERT or ACTION Ranges. The need for any corrective actions would be based on evaluation of IST and maintenance testing program data.

PROPOSED ALTERNATIVE AND BASIS: None, use of the existing vibration monitoring equipment which is calibrated to at least ±5% full scale over a frequency response range of 2.5 Hz to 1,000 Hz (SBLC pump nominal shaft speed = 6.2 Hz) during Comprehensive and Preservice Testing should provide sufficient data for monitoring the mechanical condition of the SBLC pumps. This equipment will provide accurate vibration measurements over the frequency range in which typical roller bearing vibration problems occur. This monitoring program should meet the intent of the code and will relieve the utility from the burden and expense involved with procurement, calibration, training and administrative control of new testing equipment which seems unjustified for assessing the mechanical condition of the subject pumps.

The above proposed alternative provides reasonable assurance of operational readiness since the SLC pumps have rolling element bearings and the instruments used to measure vibration are accurate at running speeds of < 1X and greater. Based on the determination that compliance with the Code requirements, results in a hardship without a compensating increase in the level of quality and safety, this proposed alternative should be granted pursuant to 10 CFR 50.55a(a)(3)(ii).

DURATION: 4th IST Interval, January 1, 2006 through December 31, 2015.

PRECEDENTS: This Relief Request was approved as RR-P-1 for the Third 10 Year IST Interval.

REFERENCES: NRC Safety Evaluation dated April 12, 1996 – TAC Nos. M93072 and M93073.

STATUS: Submitted for NRC review.

PLANT/UNIT: Edwin I Hatch Nuclear Plant/Unit 1 and 2.

INTERVAL: 4th Interval beginning January 1, 2006 and ending December 31, 2015.

COMPONENTS AFFECTED: 1E11-C002A,B,C,D (Centrifugal Pumps) – Group A
2E11-C002A,B,C,D (Vertical Line Shaft Pumps) – Group A

CODE EDITION AND ADDENDA: ASME OM Code-2001 Edition with Addenda through OMb-2003

REQUIREMENTS: ISTB-3510(b)(1) requires that the full-scale range for each analog instrument shall not be greater than three times the reference value. RHR pump discharge pressure indicators 1(2)E11-PI-R003A-D exceed this Code allowable range limit.

REASON FOR REQUEST: This alternative is a re-submittal of NRC approved 3rd Interval relief request RR-P-2 that was based on the ASME OM Code-1990 Edition, no addenda. This 4th Interval request for relief, RR-P-3, is based on the ASME OM Code-2001 Edition with Addenda through OMb-2003. There have been no substantive changes to this alternative or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions. (See References for SER date and TAC numbers associated with RR-P-2)

The original installed instrumentation associated with these pumps was not designed with the instrument range limits of OM Code ISTB-3510(b)(1) taken into consideration. The actual instrument ranges are itemized below.

INSTRUMENT	RANGE	TEST RANGE	ALLOWED RANGE	ACCURACY
1E11-PI-R003A-D	0-600 psig	≈ 182 psig	0-546 psig	± 2%
2E11-PI-R003A-D	0-600 psig	≈ 186 psig	0-558 psig	± 2%

PROPOSED ALTERNATIVE AND BASIS: None, use installed instrumentation during the quarterly Group A pump test. This request is not applicable to Comprehensive Pump or Preservice Testing.

Even though 1(2)E11-PI-R003A-D exceed the Code allowable range limit of three times the reference value, this additional gage range only results in approximately 1 psig maximum variance from the Code allowable in the measured parameter (i.e. .02 x 546 = 11 psig versus .02 x 600 = 12 psig). Using other instrumentation to account for a 1 psig improvement in measurement accuracy is not justifiable considering the cost associated with such a requirement. These pressure indicators should provide data that is sufficiently accurate to allow assessment of pump condition and to detect degradation during the performance of the quarterly pump test.

RR-P-3 (Cont.)

The above proposed alternative provides an acceptable means of assessing the condition of an RHR pump; because, if a pump was operating in the required action range, there would be limited difference in the information obtained if a more accurate pressure indicator was utilized. Based on the determination that compliance with the Code requirements results in a hardship without a compensating increase in the level of quality and safety, this proposed alternative should be granted pursuant to 10 CFR 50.55a(a)(3)(ii).

DURATION: 4th IST Interval, January 1, 2006 through December 31, 2015.

PRECEDENTS: This Relief Request was approved as RR-P-2 for the Third 10 Year IST Interval

REFERENCES: NRC Safety Evaluation dated April 12, 1996 – TAC Nos. M93072 and M93073

STATUS: Submitted for NRC review.

SOUTHERN NUCLEAR OPERATING COMPANY
IST PROGRAM
PROPOSED ALTERNATIVE IN ACCORDANCE WITH 10 CFR 50.55a(a)(3)(i)
RR-P-4, Version 1.0

PLANT/UNIT: Edwin I Hatch Nuclear Plant/Unit 1 and 2.

INTERVAL: 4th Interval beginning January 1, 2006 and ending December 31, 2015.

COMPONENTS AFFECTED: 1E11-C002A,B,C,D (Centrifugal Pumps)- Group A
2E11-C002A,B,C,D (Vertical Line Shaft Pumps) – Group A

CODE EDITION AND ADDENDA: ASME OM Code-2001 Edition with Addenda through OMb-2003

REQUIREMENTS: ISTB-3510(b)(1) requires that the full-scale range for each analog instrument shall not be greater than three times the reference value. RHR pump flow indicators 1(2)E11-FI-R608A&B exceed this Code allowable range limit.

REASON FOR REQUEST: This alternative is a re-submittal of NRC approved 3rd Interval relief request RR-P-3 that was based on the ASME OM Code-1990 Edition, no addenda. This 4th Interval request for relief, RR-P-4, is based on the ASME OM Code-2001 Edition with Addenda through OMb-2003. There have been no substantive changes to this alternative, to the OM Code requirements or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions. (See References for SER date and TAC numbers associated with RR-P-3)

The original installed instrumentation associated with these pumps was not designed with the instrument range limits of OM Code ISTB-3510(b)(1) taken into consideration. The actual instrument ranges and loop accuracies are itemized below.

INSTRUMENT	RANGE	TEST RANGE	ALLOWED RANGE	ACCURACY
1E11-FI-R608A&B	0-25000 gpm	≈ 7700 gpm	0-23100 gpm	± 0.87%
2E11-FI-R608A&B	0-25000 gpm	≈ 7850 gpm	0-23550 gpm	± 0.87%

COMPONENT/ ACCURACY	COMPONENT/ ACCURACY	COMPONENT/ ACCURACY	LOOP ACCURACY PER ISTA-2000
1E11-FT-N015A,B 0.5%	1E11-K600A,B 0.5%	1E11-FI-R608A,B 0.5%	0.87%
2E11-FT-N015A,B 0.5%	2E11-K600A,B 0.5%	2E11-FI-R608A,B 0.5%	0.87%

RR-P-4 (Cont.)

1(2)E11-FI-R608A(B) exceed the Code allowable full scale range limit of three times the reference value. The indicator range includes consideration for LPCI flow rate (17,000 gpm for two pumps), whereas the IST pump flow rate is 7,700 gpm for Unit 1 and 7,850 for Unit 2. The Code maximum allowable variance in measured flow rate would be 462 gpm (i.e., .02 x 23,100) for Unit 1 and 471 gpm (i.e., .02 x 23,550) for Unit 2. Whereas the actual maximum variance in measured flow is 218 gpm (i.e., .0087 x 25,000) for Unit 1 and Unit 2. Therefore, the actual accuracy of the installed flow indicators is greater than allowed by the Code, thus the range of the indicator exceeding the Code limit of three times the reference value is of no consequence.

PROPOSED ALTERNATIVE AND BASIS: None, use installed instrumentation for Group A, Comprehensive Pump, and Preservice Testing.

Even though 1(2)E11-FI-R608A&B exceed the Code allowable range limit of three times the reference value, the overall loop accuracy is greater than required by the Code. Therefore, the measured parameter is more accurately displayed than the Code requires.

The above proposed alternative is acceptable since the variance in the actual test results is more conservative than that allowed by the Code. Based on the determination that this alternative provides an acceptable level of quality and safety, the proposed alternative should be granted pursuant to 10 CFR 50.55a(a)(3)(i).

DURATION: 4th IST Interval, January 1, 2006 through December 31, 2015.

PRECEDENTS: This Relief Request was approved as RR-P-3 for the Third 10 Year IST Interval.

REFERENCES: NRC Safety Evaluation dated April 12, 1996 - TAC Nos. M93072 and M93073.

STATUS: Submitted for NRC review.

SOUTHERN NUCLEAR OPERATING COMPANY
IST PROGRAM
PROPOSED ALTERNATIVE IN ACCORDANCE WITH 10 CFR 50.55a(a)(3)(ii)
RR-P-5, Version 1.0

PLANT/UNIT: Edwin I Hatch Nuclear Plant/Unit 1 and 2.

INTERVAL: 4th Interval beginning January 1, 2006 and ending December 31, 2015.

COMPONENTS AFFECTED:
1E11-C001A,B,C,D (Vertical Line Shaft Pumps) – Group A
2E11-C001A,B,C,D (Vertical Line Shaft Pumps) – Group A
1P41-C001A,B,C,D (Vertical Line Shaft Pumps) – Group A
2P41-C001A,B,C,D (Vertical Line Shaft Pumps) – Group A

CODE EDITION AND ADDENDA: ASME OM Code-2001 Edition with Addenda through OMb-2003

REQUIREMENTS: ISTB-3540(b) requires that vibration measurements on vertical line shaft pumps be taken on the upper motor-bearing housing in three orthogonal directions, one of which is in the axial direction.

REASON FOR REQUEST: This alternative is a re-submittal of NRC approved 3rd Interval relief request RR-P-4 that was based on the ASME OM Code-1990 Edition, no addenda. This 4th Interval request for relief, RR-P-5, is based on the ASME OM Code-2001 Edition with Addenda through OMb-2003. There have been no substantive changes to this alternative, to the OM Code requirements or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions. (See References for SER date and TAC numbers associated with RR-P-4)

The Code required vibration measurements on the upper motor bearing housing on these vertical line shaft pumps are impractical because of the following reasons.

1. Plant design did not include permanent scaffolding or ladders which provide access to the top of the motors for the subject pumps.

2. Physical layout of the pumps and interference with adjacent components does not allow for the installation of temporary scaffolding or ladders which are adequately safe for routine use.

3. There is a relatively thin cover plate bolted to the top-center of each motor which prevents measurements in line with the motor bearing. Measurement on the edge of the motor housing would be influenced by eccentricity and may not be representative of actual axial vibration.

4. Special tools (extension rod) for placing the vibration transducers are not practical because placement would not be sufficiently accurate for trending purposes.

RR-P-5 (Cont.)

5. Research within the industry has indicated that vibration monitoring of vertical line shaft pumps has been of limited benefit for detecting mechanical degradation due to problems inherent with pump design. The OM Code imposes more stringent hydraulic acceptance criteria on these pumps than for centrifugal or positive displacement pumps. These more stringent hydraulic acceptance criteria place more emphasis on detection of degradation through hydraulic test data than through mechanical test data.

PROPOSED ALTERNATIVE AND BASIS: Vibration measurements will be taken in three orthogonal directions, one of which is in the axial direction in the area of the pump to motor mounting flange when conducting Group A, Comprehensive Pump and Preservice Testing. This is the closest accessible location to a pump bearing housing and this location is easily accessible for test personnel which should ensure repeatable vibration data and should provide readings which are at least as representative of pump mechanical condition as those required by the Code.

The above proposed alternative provides reasonable assurance of operational readiness since vibration measurements will be taken in three orthogonal directions at the pump to motor mounting flange which will provide information as to the mechanical integrity of the pump. Based on the determination that compliance with the Code requirements, results in a hardship without a compensating increase in the level of quality and safety, this proposed alternative should be granted pursuant to 10 CFR 50.55a(a)(3)(ii).

DURATION: 4^{th} IST Interval, January 1, 2006 through December 31, 2015.

PRECEDENTS: This Relief Request was approved as RR-P-4 for the Third 10 Year IST Interval.

REFERENCES: NRC Safety Evaluation dated April 12, 1996 – TAC Nos. M93072 and M93073.

STATUS: Submitted for NRC review.

SOUTHERN NUCLEAR OPERATING COMPANY
IST PROGRAM
PROPOSED ALTERNATIVE IN ACCORDANCE WITH 10 CFR 50.55a(a)(3)(i)
RR-P-6, Version 1.0

PLANT/UNIT: Edwin I Hatch Nuclear Plant/Unit 1 and 2.

INTERVAL: 4th Interval beginning January 1, 2006 and ending December 31, 2015.

COMPONENTS AFFECTED: 1E21-C001A&B (Centrifugal Pumps) – Group B
2E21-C001A&B (Vertical Line Shaft Pumps) – Group B

CODE EDITION AND ADDENDA: ASME OM Code-2001 Edition with Addenda through OMb-2003

REQUIREMENTS: Table ISTB-3500-1 requires a total instrument loop accuracy for pressure indicators of ± 2% of full scale for Group B pump tests. This request is only applicable to the Group B pump test.

REASON FOR REQUEST: This alternative is a re-submittal of NRC approved 3rd Interval relief request RR-P-5 that was based on the ASME OM Code-1990 Edition, no addenda. This 4th Interval request for relief, RR-P-6, is based on the ASME OM Code-2001 Edition with Addenda through OMb-2003. There have been no substantive changes to this alternative or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions. (See References for SER date and TAC numbers associated with RR-P-5)

Pressure indicators 1(2)E21-PI-R600A(B) exceed the maximum code allowable total loop accuracy of ± 2% . The actual instrument ranges and loop accuracies are itemized below.

INSTRUMENT	RANGE	TEST RANGE	ALLOWED RANGE	ACCURACY
1E21-PI-R600A&B	0-500 psig	≈ 290 psig	0-870 psig	± 2.06%
2E21-PI-R600A&B	0-500 psig	≈ 308 psig	0-924 psig	± 2.06%

COMPONENT/ ACCURACY	COMPONENT/ ACCURACY	COMPONENT/ ACCURACY	LOOP ACCURACY PER ISTA-2000
1E21-PT-N001A,B 0.5%	1E21-PI-R600A,B 2%	N/A N/A	2.06%
2E21-PT-N001A,B 0.5%	2E21-PI-R-600A,B 2%	N/A N/A	2.06%

RR-P-6 (Cont.)

The indicators used have full scale ranges less than that allowed by the Code. The maximum code allowable variance in measurement is 17 psig (.02 x 870) for unit 1 and 18 psig for unit 2 (.02 x 924). By using an indicator with a range less than allowed, the actual maximum variance is 11 psig (.021 x 500) which is more accurate than required by the Code. Therefore, the actual accuracy of the instruments is within the Code allowable as specified in Table ISTB-3500-1 for a Group B pump test.

PROPOSED ALTERNATIVE AND BASIS: None, the installed instruments are more accurate than required by the Code for the range of application when performing a quarterly Group B pump test. Pressure instruments that meet the code requirements will be used during Comprehensive Pump and Preservice Testing.

The above proposed alternative provides an acceptable level of quality and safety since the variance in the actual test results is less than the maximum variance allowed by the Code. Based on the determination that the use of installed instrumentation provides an acceptable level of quality and safety, this proposed alternative should be granted pursuant to 10 CFR 50.55a(a)(3)(i).

DURATION: 4^{th} IST Interval, January 1, 2006 through December 31, 2015.

PRECEDENTS: This Relief Request was approved as RR-P-5 for the Third 10 Year IST Interval.

REFERENCES: NRC Safety Evaluation dated April 12, 1996 – TAC Nos. M93072 and M93073.

STATUS: Submitted for NRC review.

SOUTHERN NUCLEAR OPERATING COMPANY
IST PROGRAM
PROPOSED ALTERNATIVE IN ACCORDANCE WITH 10 CFR 50.55a(a)(3)(i)
RR-P-7, Version 1.0

PLANT/UNIT: Edwin I Hatch Nuclear Plant/Unit 1 and 2.

INTERVAL: 4th Interval beginning January 1, 2006 and ending December 31, 2015.

COMPONENTS AFFECTED: 1(2)E41-C001 (Centrifugal Pumps) – Group B

CODE EDITION AND ADDENDA: ASME OM Code-2001 Edition with Addenda through OMb-2003

REQUIREMENTS: ISTB-3510(b)(1) requires that the full-scale range for each analog instrument shall not be greater than three times the reference value. HPCI pump suction pressure indicators 1(2)E41-PI-R004 exceed this Code allowable range limit. This request is only applicable to the Group B pump test.

REASON FOR REQUEST: This alternative is a re-submittal of NRC approved 3rd Interval relief request RR-P-6 that was based on the ASME OM Code-1990 Edition, no addenda. This 4th Interval request for relief, RR-P-7, is based on the ASME OM Code-2001 Edition with Addenda through OMb-2003. There have been no substantive changes to this alternative or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions. (See References for SER date and TAC numbers associated with RR-P-6)

1(2)E41-PI-R004 exceed the range limit of three times the reference value. The actual instrument ranges are itemized below. The indicators are calibrated to ± 1 % full scale accuracy which results in the final variance being within the maximum allowable by the Code (i.e. 1 psig versus 1.6 psig for unit 1 and 1 psig versus 1.8 psig for unit 2) when performing a Group B pump test.

INSTRUMENT	RANGE	TEST RANGE	ALLOWED RANGE	ACCURACY
1E41-PI-R004	30"Hg-100 psig	≈ 27 psig	0-81 psig	± 1%
2E41-PI-R004	30"Hg-100 psig	≈ 30 psig	0-90 psig	± 1%

PROPOSED ALTERNATIVE AND BASIS: None, the installed pressure indicators provide measurements which are within the Code allowable accuracy specified in Table ISTB-3500-1 for quarterly Group B pump tests. Pressure instruments that meet the code requirements will be used during Comprehensive Pump and Preservice Testing.

The above proposed alternative provides an acceptable level of quality and safety since the variance in the actual test results is less than the maximum variance allowed by the Code. Based on the determination that the use of installed instrumentation provides an acceptable level of quality and safety, this proposed alternative should be granted pursuant to 10 CFR 50.55a(a)(3)(i).

RR-P-7 (Cont.)

DURATION: 4th IST Interval, January 1, 2006 through December 31, 2015.

PRECEDENTS: This Relief Request was approved as RR-P-6 for the Third 10 Year IST Interval

REFERENCES: NRC Safety Evaluation dated April 12, 1996 – TAC Nos. M93072 and M93073.

STATUS: Submitted for NRC review.

SOUTHERN NUCLEAR OPERATING COMPANY
IST PROGRAM
PROPOSED ALTERNATIVE IN ACCORDANCE WITH 10 CFR 50.55a(a)(3)(i)
RR-P-8, Version 1.0

PLANT/UNIT: Edwin I Hatch Nuclear Plant/Unit 1 and 2.

INTERVAL: 4th Interval beginning January 1, 2006 and ending December 31, 2015.

COMPONENTS AFFECTED: 1(2)E41-C001 (Centrifugal Pumps) – Group B

CODE EDITION AND ADDENDA: ASME OM Code-2001 Edition with Addenda through OMb-2003

REQUIREMENTS: Table ISTB-3500-1 requires a total instrument loop accuracy for flow indicators of ± 2% of full scale for IST pump testing. HPCI flow indicators 1(2)E41-FI-R612 do not meet this requirement.

REASON FOR REQUEST: This alternative is a re-submittal of NRC approved 3rd Interval relief request RR-P-7 that was based on the ASME OM Code-1990 Edition, no addenda. This 4th Interval request for relief, RR-P-8, is based on the ASME OM Code-2001 Edition with Addenda through OMb-2003. There have been no substantive changes to this alternative, to the OM Code requirements or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions. (See References for SER date and TAC numbers associated with RR-P-7)

Flow indicators 1(2)E41-FI-R612 exceed the maximum code allowable total loop accuracy. The actual instrument loop accuracies are itemized below. The indicator used has a full scale range less than that allowed. Therefore, the maximum variance allowable by the Code is 255 gpm (.02 x 12750) whereas the actual maximum variance is 106 gpm (.0212 x 5000). Therefore, the actual accuracy of the instrument loop is better than that allowable by the Code.

INSTRUMENT	**RANGE**	**TEST RANGE**	**ALLOWED RANGE**	**ACCURACY**
1E41-FI-R612	0-5000 gpm	≈ 4250 gpm	0-12750 gpm	± 2.12%
2E41-FI-R612	0-5000 gpm	≈ 4250 gpm	0-12750 gpm	± 2.12%

COMPONENT/ ACCURACY	**COMPONENT/ ACCURACY**	**COMPONENT/ ACCURACY**	**LOOP ACCURACY PER ISTA-2000**
1E41-FT-N008 0.5%	1E41-K601 0.5%	1E41-FI-R612 2%	2.12%
2E41-FT-N008 0.5%	2E41-K601 0.5%	2E41-FI-R612 2%	2.12%

RR-P-8 (Cont.)

PROPOSED ALTERNATIVE AND BASIS: None, the installed flow indicators provide measurements which are within the Code allowable accuracy as specified in Table ISTB-3500-1 for flow testing. These flow indicators will be used during the Group B, Comprehensive Pump, and Preservice Test.

The above proposed alternative provides an acceptable level of quality and safety since the variance in the actual test results is less than the maximum variance allowed by the Code. Based on the determination that the use of installed instrumentation provides an acceptable level of quality and safety, this proposed alternative should be granted pursuant to 10 CFR 50.55a(a)(3)(i).

DURATION: 4th IST Interval, January 1, 2006 through December 31, 2015.

PRECEDENTS: This Relief Request was approved as RR-P-7 for the Third 10 Year IST Interval.

REFERENCES: NRC Safety Evaluation dated April 12, 1996 – TAC Nos. M93072 and M93073.

STATUS: Submitted for NRC review.

SOUTHERN NUCLEAR OPERATING COMPANY
IST PROGRAM
PROPOSED ALTERNATIVE IN ACCORDANCE WITH 10 CFR 50.55a(a)(3)(ii)
RR-P-9, Version 1.0

PLANT/UNIT: Edwin I Hatch Nuclear Plant/Unit 2.

INTERVAL: 4th Interval beginning January 1, 2006 and ending December 31, 2015.

COMPONENTS AFFECTED: 2P41-C002 (Vertical Line Shaft Pump) – Group B

CODE EDITION AND ADDENDA: ASME OM Code-2001 Edition with Addenda through OMb-2003

REQUIREMENTS: ISTB-3540(b) requires that vibration measurements on vertical line shaft pumps be taken on the upper motor-bearing housing in three orthogonal directions, one of which is in the axial direction.

REASON FOR REQUEST: This alternative is a re-submittal of NRC approved 3rd Interval relief request RR-P-8 that was based on the ASME OM Code-1990 Edition, no addenda. This 4th Interval request for relief, RR-P-9, is based on the ASME OM Code-2001 Edition with Addenda through OMb-2003. There have been no substantive changes to this alternative, to the OM Code requirements or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions. (See References for SER date and TAC numbers associated with RR-P-8)

The Code required vibration measurements on the upper motor-bearing housing on this vertical line shaft pump are impractical because of the following reasons.

1. The motor has a cooling fan mounted at the top which is attached to the rotating shaft. The fan is protected by a relatively thin cover plate which prevents access to the motor housing for vibration measurements. Removing the cover does not provide for transducer placement since the rotating fan would still be in the way.

2. Research within the industry has indicated that vibration monitoring of vertical line shaft pumps has been of limited benefit for detecting mechanical degradation due to problems inherent with pump design. The OM Code imposes more stringent hydraulic acceptance criteria on these pumps than for centrifugal or positive displacement pumps. These more stringent hydraulic acceptance criteria place more emphasis on detection of degradation through hydraulic test data than through mechanical test data.

PROPOSED ALTERNATIVE AND BASIS: Vibration measurements will be taken in three orthogonal directions, one of which is in the axial direction in the area of the pump to motor mounting flange. This is the closest accessible location to a pump bearing housing and this location is easily accessible for test personnel which should ensure repeatable vibration data and should provide readings which are at least as representative of pump mechanical condition as those required by the Code.

RR-P-9 (Cont.)

Therefore, application of the OM Code hydraulic testing criteria along with radial and axial vibration monitoring in the area of the pump to motor mounting flange should provide adequate data for assessing the condition of the subject pumps and for monitoring degradation. This request is only applicable to Comprehensive Pump and Preservice Testing.

The above proposed alternative provides reasonable assurance of operational readiness since vibration measurements will be taken in three orthogonal directions at the pump to motor mounting flange which will provide information as to the mechanical integrity of the pump. Based on the determination that compliance with the Code requirements, results in a hardship without a compensating increase in the level of quality and safety, this proposed alternative should be granted pursuant to 10 CFR 50.55a(a)(3)(ii).

DURATION: 4th IST Interval, January 1, 2006 through December 31, 2015.

PRECEDENTS: This Relief Request was approved as RR-P-8 for the Third 10 Year IST Interval.

REFERENCES: NRC Safety Evaluation dated April 12, 1996 – TAC Nos. M93072 and M93073.

STATUS: Submitted for NRC review.

WITHDRAWN

SOUTHERN NUCLEAR OPERATING COMPANY
IST PROGRAM
PROPOSED ALTERNATIVE IN ACCORDANCE WITH 10 CFR 50.55a(a)(3)(ii)
RR-P-11, Version 1.0

PLANT/UNIT: Edwin I Hatch Nuclear Plant/Unit 1 and 2.

INTERVAL: 4th Interval beginning January 1, 2006 and ending December 31, 2015.

COMPONENTS AFFECTED:
1E11-C002A,B,C & D (Centrifugal Pumps) – Group A
1E21-C001A & B (Centrifugal Pumps) – Group B
2E11-C002A,B,C & D (Vertical Line Shaft Pumps) – Group A
2E21-C001A & B (Vertical Line Shaft Pumps) – Group B

CODE EDITION AND ADDENDA: ASME OM Code-2001 Edition with Addenda through OMb-2003

REQUIREMENTS: ISTB-3520(b) requires that differential pressure be determined by the difference between the pressure at a point in the inlet pipe and the pressure at a point in the discharge pipe if a direct indicating instrument is not provided.

REASON FOR REQUEST: This alternative is a re-submittal of NRC approved 3rd Interval relief request RR-P-14 that was based on the ASME OM Code-1990 Edition, no addenda. This 4th Interval request for relief, RR-P-11, is based on the ASME OM Code-2001 Edition with Addenda through OMb-2003. There have been no substantive changes to this alternative, to the OM Code requirements or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions. (See References for SER date and TAC numbers associated with RR-P-14)

The RHR and CS pumps are aligned to the suppression pool (torus) during all modes of normal plant operation which results in a virtually constant suction pressure. IST is performed utilizing a full flow test line which circulates water to and from the suppression pool. The Plant's Technical Specifications require that the suppression pool be maintained within a narrow range of level, temperature, and internal pressure during plant operation which results in a suction pressure of approximately 5 psig. The Technical Specification operability limits for the suppression pool are itemized below.

<u>Unit 1/Unit 2</u>

Level	≥ 146" & ≤ 150"
Internal Pressure	≤ 1.75 psig
Water Temperature	≤ 100°F

These Technical Specification operability limits for the suppression pool result in a maximum difference in calculated pump suction pressure of < 2 psig. This 2 psig maximum difference is insignificant when performing quarterly Group A or Group B IST considering the normal discharge pressure of the RHR and CS pumps (see table below).

RR-P-11 (Cont.)

This 2 psig variance is also insignificant in the calculation of differential pressure (ΔP = Po-Pi) when considering the Group A pump test acceptable operating range (i.e., 95-110% for vertical line shaft pumps from Table ISTB-5200-1 and 90-110% for centrifugal pumps from Table ISTB-5100-1) and the allowable ± 2% instrument accuracy from Table ISTB-3500-1; or when considering the Group B pump test acceptable operating range (i.e., 90-110% for centrifugal and vertical line shaft pumps from Table ISTB-5100-1 and Table ISTB-5200-1) and the allowable ± 2% instrument accuracy from Table ISTB-3500-1.

Therefore, measurement of differential pressure provides no added benefit for determining pump operational readiness or for monitoring pump degradation.

Pump	Reference Discharge Pressure	Maximum Variance
Unit 1 RHR	180 - 193 psig	1.11% max.
Unit 1 CS	305 - 310 psig	0.66% max.
Unit 2 RHR	172 - 190 psig	1.16% max.
Unit 2 CS	285 - 290 psig	0.70% max.

The following table summarizes several years worth of pump IST data. This summary confirms that the RHR and Core Spray pump's suction pressures are consistent and are relatively insignificant in comparison with the pumps' discharge pressure. Applying an average suction pressure of 5 psig, when calculating differential pressure, will provide data that is meaningful for assessing operational readiness and for monitoring pump degradation.

RR-P-11 (Cont.)

PUMP MPL No.	MIN. PRES.	MAX. PRES.	AVG. PRES.	REMARKS
1E11-C002A	3.9	6.8	5.1 (52)	Qr=8000 gpm, ΔPr=166 psid
1E11-C002B	3.2	6.25	4.8 (47)	Qr=7700 gpm, ΔPr=185 psid
1E11-C002C	3.0	6.2	4.8 (46)	Qr=7700 gpm, ΔPr=176 psid
1E11-C002D	3.4	6.0	4.6 (40)	Qr=7700 gpm, ΔPr=183 psid
1E21-C001A	2.5	5.8	4.1 (68)	Qr=4625 gpm, ΔPr=289 psid
1E21-C001B	1.7 *	5.9	3.7 (47)	Qr=4625 gpm, ΔPr=282 psid
2E11-C002A	3.0	6.8	5.2 (50)	Qr=8000 gpm, ΔPr=187 psid
2E11-C002B	4.3	7.1	5.3 (48)	Qr=7800 gpm, ΔPr=180 psid
2E11-C002C	3.0	6.9	5.3 (55)	Qr=7900 gpm, ΔPr=182 psid
2E11-C002D	3.8	6.2	4.9 (47)	Qr=7700 gpm, ΔPr=175 psid
2E21-C001A	4.15	6.9	5.1 (43)	Qr=4750 gpm, ΔPr=302 psid
2E21-C001B	3.3	6.4	5.0 (53)	Qr=4750 gpm, ΔPr=303 psid
AVERAGE	3.3	6.4	4.9	N/A

Number in parenthesis "( )" indicates the number of test values averaged to get indicated value.
* One time occurrence only.

Additionally, a test gage is required to be installed to perform IST of each pump. The permanently installed pump suction pressure gages encompass a wider range of pressures than does IST and thus exceed the OM Code allowable range limit (3 times the reference value). The installed RHR pump gages must account for the pressure experienced with the RHR loop in the shutdown cooling mode of operation. The installed CS pump gages must account for the pressure experienced with the CS suction aligned to the Condensate Storage Tank. Therefore, a test gage, which satisfies the Code range limits, must be temporarily installed each time that IST is required.

RR-P-11 (Cont.)

Applying a constant pump suction pressure, when calculating differential pressure, will allow the IST to be performed with the installed pressure gages thus lessening the burden on operations personnel responsible for the testing. Since test gages are required to be calibrated both prior to and after usage, it also eliminates the possibility of invalidating test data due to a gage being damaged during transportation, installation or removal.

Mechanical degradation of centrifugal pumps, which experience significant differences in suction (inlet) pressure, would be indicated by changes in the differential pressure. However, for these pumps, the suction pressure variance is insignificant in comparison to the developed head (pressure).

Therefore, monitoring discharge pressure and calculating differential pressure assuming a constant 5 psig suction pressure provides an adequate method to determine operational readiness and detect potential degradation.

PROPOSED ALTERNATIVE AND BASIS: Pump suction pressure will be assumed to be 5 psig based on a review of several years of IST data which support suction pressure being virtually constant when performing Group A and Group B testing. During IST, pump differential pressure will be calculated by measuring pump discharge pressure and subtracting 5 psig. This value will then be compared to the corresponding reference value. The acceptance criteria of Tables ISTB-5100-1 and ISTB-5200-1 will be applied for assessing pump operational readiness and for monitoring potential pump degradation during the applicable Group A or Group B pump test. This testing method meets the intent of the Code for monitoring pump operational readiness and degradation, and relieves the Licensee of the burden associated with the use of temporary test gages. This request is not applicable to Comprehensive Pump or Preservice Testing.

The above proposed alternative provides an acceptable means of evaluating pump performance without causing a significant decrease in the ability to monitor operational readiness. Based on the determination that compliance with the Code requirements, results in a hardship or unusual difficulty without a compensating increase in the level of quality and safety, this proposed alternative should be granted pursuant to 10 CFR 50.55a(a)(3)(ii).

DURATION: 4th IST Interval, January 1, 2006 through December 31, 2015.

PRECEDENTS: This Relief Request was approved as RR-P-14 for the Third 10 Year IST Interval.

REFERENCES: NRC Safety Evaluation dated May 4, 1999 – TAC Nos. MA5045 and MA5046.

STATUS: Submitted for NRC review.

SOUTHERN NUCLEAR OPERATING COMPANY
IST PROGRAM
PROPOSED ALTERNATIVE IN ACCORDANCE WITH 10 CFR 50.55a(a)(3)(i)
RR-P-12, Version 1.0

PLANT/UNIT: Edwin I Hatch Nuclear Plant/Unit 2.

INTERVAL: 4th Interval beginning January 1, 2006 and ending December 31, 2015.

COMPONENTS AFFECTED: 2P41-C002 (Vertical Line Shaft Pump) – Group B

CODE EDITION AND ADDENDA: ASME OM Code-2001 Edition with Addenda through OMb-2003

REQUIREMENTS: ISTB-3510(b)(1) requires that the full-scale range of analog instruments shall not be greater than three times the reference value, and Table ISTB-3500-1 requires an accuracy of ± 2% full scale.

REASON FOR REQUEST: This alternative is a re-submittal of NRC approved 3rd Interval relief request RR-P-15 that was based on the ASME OM Code-1990 Edition, no addenda. This 4th Interval request for relief, RR-P-12, is based on the ASME OM Code-2001 Edition with Addenda through OMb-2003. There have been no substantive changes to this alternative, to the OM Code requirements or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions. (See References for SER date and TAC numbers associated with RR-P-15)

The flowrate for the Standby Diesel Service Water (SDSW) pump is determined by measuring the differential pressure (dp), in inches of water, across a flow element and then using the vendor correlation chart to convert dp to flowrate in gallons-per-minute (gpm). The dp indicator (2P41-R383) has a full-scale range of -178 inches of water to +178 inches of water, which is greater than three times the reference value, and is calibrated to ± 4 inches of water (i.e., ± 1.125% of full-scale). The indicator has a range which allows measurement of the flowrate in either direction across the flow element, thus the negative and positive scale ranges. The vendor supplied dp to flow correlation chart has a range of 50 - 145 inches of water which corresponds to a flowrate range of 500 - 850 gpm.

The reference dp for this pump is presently 82 inches of water which corresponds to a flow rate of 640 gpm. The OM Code would allow a full-scale range of 0 - 246 inches of water (i.e., 3 X 82) and a calibration accuracy of ± 4.92 inches of water (i.e., 0.02 X 246).

The combined range and accuracy of the installed instruments is within the maximum allowable of ISTB-3510(b)(1) and Table-3500-1. The maximum Code allowable dp variance would be ± 4.92 inches of water whereas the actual dp variance is ± 4 inches of water. Therefore, use of the existing dp indicators and the vendor correlation chart provides flowrate measurements for IST that are at least as accurate as required by the OM Code.

RR-P-12 (Cont.)

PROPOSED ALTERNATIVE AND BASIS: None, the installed instrumentation will be utilized to determine flowrate for the SDSW pump test. The use of this instrumentation is supported by the guidance contained in NRC NUREG-1482, Revision 1 Section 5.5.1, since the combined range and accuracy variance of the installed instrumentation is within the maximum allowable variance of the OM Code. This relief request was developed for documentation purposes as described in NUREG-1482 Revision 1. This request applies to flowrate measurements for Group B, Comprehensive Pump, and Preservice Testing.

The above proposed alternative is acceptable since the accuracy of the instrumentation is better than the absolute accuracy required by the Code. Based on the determination that this alternative provides an acceptable level of quality and safety, the proposed alternative should be granted pursuant to 10 CFR 50.55a(a)(3)(i).

DURATION: 4th IST Interval, January 1, 2006 through December 31, 2015.

PRECEDENTS: This Relief Request was approved as RR-P-15 for the Third 10 Year IST Interval.

REFERENCES: NRC Safety Evaluation dated December 7, 1998 – TAC Nos. MA1296 and MA1297.

STATUS: Submitted for NRC review.

SOUTHERN NUCLEAR OPERATING COMPANY
IST PROGRAM
PROPOSED ALTERNATIVE IN ACCORDANCE WITH 10 CFR 50.55a(a)(3)(i)
RR-V-6, Version 1.0

PLANT/UNIT: Edwin I Hatch Nuclear Plant/Unit 1 and 2.

INTERVAL: 4th Interval beginning January 1, 2006 and ending December 31, 2015.

COMPONENTS AFFECTED:

Unit 1

GROUP	MPL	CLASS	SIZE	RR/ROJ/Note*
1E11-1	1E11-F046A	2	3"	ROJ-V-11
	1E11-F046B	2	3"	ROJ-V-11
	1E11-F046C	2	3"	ROJ-V-11
	1E11-F046D	2	3"	ROJ-V-11
1E11-2	1E11-F125A	2	2"	Note 9
	1E11-F125B	2	2"	Note 9
1E21-1	1E21-F036A	2	3"	ROJ-V-26
	1E21-F036B	2	3"	ROJ-V-26
1E21-2	1E21-F039A	2	1½"	Note 9
	1E21-F039B	2	1½"	Note 9
1E41-1	1E41-F022	2	2"	ROJ-V-15
1E41-2	1E41-F040	2	2"	ROJ-V-16
1E41-4	1E41-F046	2	4"	ROJ-V-17
1E41-5	1E41-F048	2	2"	Note 9
1E41-6	1E41-F057	2	2"	Note 9
1E51-1	1E51-F021	2	2"	ROJ-V-21
1P41-5	1P41-F1074	3	4"	Note 9
	1P41-F1075	3	4"	Note 9

Unit 2

GROUP	MPL	CLASS	SIZE	RR/ROJ/Note*
2E11-1	2E11-F046A	2	3"	ROJ-V-11
	2E11-F046B	2	3"	ROJ-V-11
	2E11-F046C	2	3"	ROJ-V-11
	2E11-F046D	2	3"	ROJ-V-11
2E11-2	2E11-F123A	2	2"	Note 9
	2E11-F123B	2	2"	Note 9
2E21-2	2E21-F036A	2	3"	ROJ-V-26
	2E21-F036B	2	3"	ROJ-V-26
2E21-3	2E21-F039A	2	1½"	Note 9
	2E21-F039B	2	1½"	Note 9
2E41-1	2E41-F022	2	2"	ROJ-V-15
2E41-2	2E41-F040	2	2"	ROJ-V-16
2E41-4	2E41-F046	2	4"	ROJ-V-17
2E41-5	2E41-F048	2	2"	Note 9
2E41-6	2E41-F057	2	2"	Note 9
2E51-1	2E51-F021	2	2"	ROJ-V-21
2P41-3	2P41-F098	3	4"	Note 9
2P41-5	2P41-F105	3	3"	Note 9

RR-V-6 (cont.)

* Denotes reference to additional information contained in the IST Program related to the use of disassembly, inspection, and manual exercising as an alternative to quarterly exercising with flow.

CODE EDITION AND ADDENDA: ASME OM Code-2001 Edition with Addenda through OMb-2003

REQUIREMENTS: ASME OM Code, 2001 Edition and OMb-2003, paragraph ISTC-5221(c) allows sample disassembly to verify operability of check valves as an alternative to the exercising requirements of paragraphs ISTC-5221(a) and (b). Paragraph ISTC-5221(c)(3) states that "at least one valve in the group shall be disassembled and examined at each refueling outage; all valves in each group shall be disassembled and examined at least once every 8 years".

REASON FOR REQUEST: This alternative is a re-submittal of NRC approved 3rd Interval relief request RR-V-17 that was based on the ASME OM Code-1990 Edition, no addenda. This 4th Interval request for relief, RR-V-6, is based on the ASME OM Code-2001 Edition with Addenda through OMb-2003. There have been no substantive changes to this alternative or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions. However, there has been substantial change in OM Code requirements in that guidelines for sample disassembly of check valves are now provided in the OM Code and are reflected below. (See References for SER date and TAC numbers associated with RR-V-17)

ASME OM Code, 2001 Edition and OMb-2003, paragraphs ISTC-5221(c)(1) and (c)(2), provide guidance for the grouping of check valves and sample disassembly as an alternative to the requirements specified in OM Code, paragraphs ISTC-5221(a) and ISTC-5221(b). All of the above listed check valves are specifically identified in the existing Hatch IST program for application of the guidelines provided in the OM Code for sample disassembly. These check valves are grouped per ISTC-5221(c)(1) with a maximum of four valves and a minimum of one valve per group. At least one check valve from each group is disassembled, visually inspected, and manually full-stroke exercised during a refueling outage or when the plant is online pursuant to this previously approved relief request. Therefore, the OM Code requirements, associated with check valve disassembly, are incorporated into the existing Hatch IST program.

The Code of Federal Regulations, Title 10, Part 50, paragraph 65(a)(4) (i.e., 10CFR50.65(a)(4)) requires Licensees to assess and manage the increase of risk that may result from proposed maintenance activities. SNC complies with the 10CFR50.65(a)(4) requirements at Plant Hatch via the application of a safety related procedure governing maintenance

RR-V-6 (cont.)

scheduling. This procedure dictates the requirements for risk evaluations as well as the necessary levels of action required for risk management in each case. The procedure also controls operation of the on-line risk monitor system which is based on the Hatch Probabilistic Risk Assessment (PRA). In addition, this procedure provides methods for risk assessing maintenance activities for components not directly in the Hatch Probabilistic Safety Assessment (PSA) model. With the use of risk evaluation for virtually all aspects of nuclear plant operation, SNC has initiated efforts to accomplish additional maintenance, surveillance, and testing activities during normal operation. Planned activities are evaluated utilizing risk insights to determine the impact on safe operation of the plant and the ability to maintain associated safety margins. Individual system components, a system train, or a complete system may be planned to be out-of-service to allow maintenance, or other activities, during normal operation.

All of the above listed check valves are located within systems that could be scheduled for maintenance during normal operation, thus allowing for their disassembly, examination, and full-stroke exercising. All activities are performed in accordance with plant procedures which meet 10CFR50.65(a)(4) requirements and provide detailed instructions for disassembly, inspection, exercising, and considerations for corrective actions, and potential regulatory required scope expansion are factored into the planning process.

PROPOSED ALTERNATIVE AND BASIS: Check valve disassembly, inspection, and manual exercising will continue to be performed utilizing the guidance contained in the OM Code. Such disassembly, inspection, and manual exercising will be performed during normal plant operation or during refueling outages as appropriate. At least one check valve from each group will be inspected on a refueling outage frequency (currently 24-months). Any check valve disassembly performed during normal plant operation will be managed in accordance with the requirements of 10CFR50.65(a)(4).

Any check valve that is not capable of full-stroke movement (i.e., due to binding), has failed, or has unacceptably degraded valve internals shall have the cause of failure analyzed and the condition corrected prior to return to service. If the group contains more than one check valve, valves in the same group that may also be affected by this failure mechanism shall be inspected during the refueling outage or within 180 days if the initial valve was disassembled during normal plant operation. Additionally, an evaluation shall be performed to document justification for the continued operational readiness for each valve during this 180 day time period, if applicable. The evaluation shall include consideration of other tests or examinations, (e.g., flow exercising, leak testing) and their frequency, that can be performed to support continued operational

RR-V-6 (cont.)

readiness until such time that the other valve(s) in the group can be inspected. This 180 day time period will allow for adequate planning, scheduling and parts procurement to support efficient inspection of the other valves in the group. In no instance shall the inspection be deferred beyond the next refueling outage.

The use of risk assessment to plan and schedule check valve disassembly during normal operation will provide an acceptable level of quality and safety and should be granted pursuant to 10CFR50.55a(3)(i).

DURATION: 4th IST Interval, January 1, 2006 through December 31, 2015.

PRECEDENTS: This Relief Request was approved as RR-V-17 for the Third 10 Year IST Interval.

REFERENCES: NRC Safety Evaluation dated October 16, 2001 – TAC Nos.MB2401 and MB2402 .

STATUS: Submitted for NRC review.

SOUTHERN NUCLEAR OPERATING COMPANY
IST PROGRAM
PROPOSED ALTERNATIVE IN ACCORDANCE WITH 10 CFR 50.55a(a)(3)(i)
RR-V-7, Version 1.0

PLANT/UNIT: Edwin I Hatch Nuclear Plant/Unit 1 and 2.

INTERVAL: 4th Interval beginning January 1, 2006 and ending December 31, 2015.

COMPONENTS AFFECTED:

	MPL	CLASS	SIZE
Group 1	1E41-F045	2	16"

	MPL	CLASS	SIZE
Group 2	2E41-F045	2	16"

CODE EDITION AND ADDENDA: ASME OM Code-2001 Edition with Addenda through OMb-2003

REQUIREMENTS: ASME OM Code, 2001 Edition and OMb-2003, paragraph ISTC-5221(c) allows sample disassembly to verify operability of check valves as an alternative to the exercising requirements of paragraphs ISTC-5221(a) and (b). Paragraph ISTC-5221(c)(3) states that "at least one valve in the group shall be disassembled and examined at each refueling outage; all valves in each group shall be disassembled and examined at least once every 8 years".

REASON FOR REQUEST: This alternative is a re-submittal of NRC approved 3rd Interval relief request RR-V-18 that was based on the ASME OM Code-1990 Edition, no addenda. This 4th Interval request for relief, RR-V-7, is based on the ASME OM Code-2001 Edition with Addenda through OMb-2003. There have been no substantive changes to this alternative or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions. However, there has been substantial change in OM Code requirements in that guidelines for sample disassembly of check valves are now provided in the OM Code and are reflected below. (See References for SER date and TAC numbers associated with RR-V-18)

ASME OM Code, 2001 Edition and OMb-2003, paragraphs ISTC-5221(c)(1) and (c)(2), provide guidance for the grouping of check valves and sample disassembly as an alternative to the requirements specified OM Code, paragraphs ISTC-5221(a) and ISTC-5221(b). The above listed check valves are specifically identified in the existing Hatch IST program for application of the guidelines provided in the OM Code for sample disassembly. Each check valve is scheduled for disassembly, visually examination, and manual full-stroke exercising during a refueling outage or when the plant is online pursuant to this previously approved relief request. Therefore, the OM Code requirements, associated with check valve disassembly, are incorporated into the existing Hatch IST program.

RR-V-7 (Cont.)

These check valves are located in the respective unit's HPCI pump suction from the suppression pool. The HPCI pump suction is normally aligned to the Condensate Storage Tank (CST) during normal operation and the system is provided with automatic controls which swap the suction to the suppression pool should CST level fall below a specific set-point. The suction line from the suppression pool is provided with two motor operated valves (MOVs) between the suppression pool and check valve 1/2E41-F045, and one MOV between the check valve and the CST suction line. These MOVs provide for normal isolation and the system automatic swap feature. Neither MOV (1/2E41-F042 or F051) from the suppression pool is required to be leakrate tested in accordance with 10 CFR 50 Appendix J because the plant licensing basis assumes the suppression pool to remain water filled post accident.

The MOV downstream from the check valve (1/2E41-F041) is not required to be leakrate tested to satisfy any code or regulatory requirements.

In order to isolate check valve 1/2E41-F045 for disassembly, SNC will close and disable both MOVs (1/2E41-F042 and F051) on the suppression pool side of the check valve and the MOV (1/2E41-F041) on the CST side of the check valve. Closing and disabling these valves provides a high level of confidence that the check valve is adequately isolated from the suppression pool, due to double valve isolation, and the CST to prevent any significant leakage and ensures that inadvertent operation, while the check valve is disassembled, does not occur. Additionally, SNC will perform a leakrate type test of the valve 1/2E41-F041 (CST MOV) at least once each cycle. This leakrate type test will be performed at containment accident pressure and the acceptance criteria of the ASME OM Code, 2001 Edition, paragraph ISTC-3630(e)(1) (i.e., 0.5D gal/min or 5gal/min, whichever is less) will be utilized for evaluation of leakrate test data. The disassembly procedure also includes requirements for maintenance personnel to ensure the check valve is adequately isolated before complete removal of the valve cover plate (bonnet). No disassembly will be attempted unless the above leakage rate test criteria are satisfied.

Additionally, the Code of Federal Regulations, Title 10, Part 50, paragraph 65(a)(4) (i.e., 10 CFR 50.65(a)(4)) requires Licensees to assess and manage the increase of risk that may result from proposed maintenance activities. SNC complies with the 10 CFR 50.65(a)(4) requirements at Plant Hatch via the application of a safety related procedure governing maintenance scheduling. This procedure dictates the requirements for risk evaluations as well as the necessary levels of action required for risk management in each case.

RR-V-7 (Cont.)

The procedure also controls operation of the on-line risk monitoring system which is based on the Hatch Probabilistic Risk Assessment (PRA). In addition, this procedure provides methods for risk assessing maintenance activities for components not directly in the Hatch Probabilistic Safety Assessment (PSA) model. With the use of risk evaluation for virtually all aspects of nuclear plant operation, SNC has initiated efforts to accomplish additional maintenance, surveillance, and testing activities during normal operation. Planned activities are evaluated utilizing risk insights to determine the impact on safe operation of the plant and the ability to maintain associated safety margins. Individual system components, a system train, or a complete system may be planned to be out-of-service to allow maintenance, or other activities, during normal operation.

All activities associated with disassembly of the listed check valves are performed in accordance with plant procedures which meet 10 CFR 50.65(a)(4) requirements. These procedures provide detailed instructions for the pre-disassembly leakrate test of the isolation MOVs, and disassembly, visual examination, and full-stroke exercising of the respective check valve. Closing and disabling the isolation MOVs will be controlled in accordance with site administrative control procedures. Additionally, considerations for corrective actions are factored into the planning process.

PROPOSED ALTERNATIVE AND BASIS: Check valve disassembly, visual examination, and manual exercising will continue to be performed utilizing the guidance contained in the OM Code. However, such disassembly, visual examination, and manual exercising will be performed during normal operation in conjunction with appropriate system outages, or during refueling outages. Since there is only one valve per group, each valve will be inspected on a refueling outage frequency (currently 24 months). Check valve disassembly during normal plant operation will be managed in accordance with the requirements of 10 CFR 50.65(a)(4) in conjunction with the isolation and leakrate testing described above.

The use of risk assessment to plan and schedule check valve disassembly during normal operation, MOV closure, and leakrate testing to ensure check valve isolation prior to disassembly during normal operation will provide an acceptable level of quality and safety and should be granted pursuant to 10CFR50.55a(3)(i).

DURATION: 4^{th} IST Interval, January 1, 2006 through December 31, 2015.

PRECEDENTS: Relief Request was approved as RR-V-18 for the Third 10 Year IST Interval.

REFERENCES: NRC Safety Evaluation dated November 7, 2003 – TAC Nos. MC0109 and MC0110.

STATUS: Submitted for NRC review.