APPENDIX B

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-458/92-22

Operating License: NPF-47

Licensee: Gulf States Utilities Company (GSU)
P.O. Box 220
St. Francisville, Louisiana 70775

Facility Name: River Bend Station (RBS)

Inspection At: RBS, St. Francisville, Louisiana

Inspection Conducted: June 15 through July 22, 1992

Inspectors: L. E. Eilershaw, Reactor Inspector, Materials and Quality Programs Section, Division of Reactor Safety

R. C. Stewart, Reactor Inspector, Materials and Quality Programs Section, Division of Reactor Safety

P. A. Goldberg, Reactor Inspector, Plant Systems Section Division of Reactor Safety

T. F. Westerman, Chief, Plant Systems Section Division of Reactor Safety

Approved: I. Barnes 9-15-92
I. Barnes, Chief, Materials and Quality Programs Section, Division of Reactor Safety — Date

Inspection Summary

Inspection Conducted June 15 through July 22, 1992 (Report 50-458/92-22)

Areas Inspected: Routine, announced inspection to determine the effectiveness of the licensee's program for assuring the reliability and operability of safety-related check valves.

Results:

- The River Bend check valve program was found to be satisfactory. There appeared, however, to be a lack of coordination or information sharing between this program activity and the inservice testing group.
- The acoustic emissions monitoring diagnostic testing methodology showed promise as a technique for assessing the operational readiness of check

valves in water service. A review of the acoustic emissions monitoring surveillance test results showed that the data was being conservatively evaluated, since any aberration required check valve disassembly for maintenance.

- Guidelines and positions contained in Generic Letter 89-04, "Guidance on Developing Acceptable Inservice Testing Programs," were appropriately addressed.

- The licensee's reviews of generic letters, information notices, and bulletins were satisfactorily documented, and required responses had been made to the NRC.

- The lack of formal documentation indicated that a viable check valve performance trending program had not been currently established.

- A check valve design review was performed by the licensee to ascertain whether valves were of the proper type and size for operating conditions, and were properly oriented and located at a suitable distance from sources of turbulence. Those check valves that were identified as being susceptible to failure were included in the check valve program.

- A noncited violation was identified (paragraph 2.7) involving check valve orientation.

- A violation was identified (paragraph 2.7) concerning the failure to generate condition reports for multiple failures of ASME Section III Code, Class 2, main steam safety relief valve accumulators and their check valves.

Summary of Inspection Findings

- Violation 458/9222-01 was opened (paragraph 2.7).

- A noncited violation was identified (paragraph 2.7).

- Inspection Followup Item 458/9222-02 was opened (paragraph 2.4).

DETAILS

1 PERSONS CONTACTED

GSU

*J. Amburgey, Senior Nuclear Engineer, Check Valve Program Coordinator
*D. Andrews, Director, Quality Assurance
*R. Backen, Supervisor, Quality Assurance Systems
*W. Beck, Supervisor, Nuclear Steam Supply System Design Engineering
*J. Booker, Manager, Nuclear Industry Relations
*C. Crouse, Manager, Administration
*J. Deddens, Senior Vice President
*G. Dolney, Systems Engineer
*L. England, Director, Nuclear Licensing
*W. Fountain, Senior Quality Assurance Engineer
*K. Giadrosich, Supervisor, Quality Engineering
*P. Graham, Plant Manager
*J. Hamilton, Director Design Engineering
*G. Hockman, Senior Quality Assurance Engineer
*C. Jones, Valve Coordinator
*D. Lorfing, Supervisor, Nuclear Licensing
*I. Malik, Supervisor, Operations Quality Assurance
*R. Martin, Senior Systems Engineer
*J. McQuirter, Licensing Engineer
*W. Odell, Manager, Oversight
*J. Spivey, Jr., Senior Quality Assurance Engineer
*K. Suhrke, General Manager, Engineering & Administration

CAJUN ELECTRIC POWER COOPERATIVE, INC.

*W. Day, Site Representative

The inspectors also interviewed other licensee employees during the inspection.

*Denotes those attending the exit meeting on June 19 and July 8, 1992.

2 PERFORMANCE OF SAFETY-RELATED CHECK VALVES (2515/110)

The purpose of this inspection was to determine the effectiveness of the licensee's program to provide assurance of the operability and reliability of check valves in safety-related systems.

2.1 Background

In recent years, numerous deficiencies related to check valves have been identified throughout the nuclear industry. Information pertaining to these deficiencies has been disseminated by the NRC in Information Notices, and by

the Institute of Nuclear Power Operations (INPO) in Significant Operating Experience Reports (SOERs). The RBS check valve program was established in response to recommendations contained in INPO's SOER 86-3, dated October 15, 1986. The RBS design engineering organization requested Stone & Webster Engineering Corporation to perform an evaluation of all American Society of Mechanical Engineers (ASME) Code check valves installed in 17 safety-related systems. This evaluation, documented in Engineering Evaluation and Assistance Request (EEAR) 87-R0404 and completed on March 2, 1988, was based on factors such as valve sizing, type, location, and orientation for water service valves and orientation for air service valves. A total of 226 ASME Code check valves (180 water and 46 air) were reviewed. A reevaluation, documented in EEAR 88-R0037 and completed on July 21, 1988, was performed in response to INPO's recommendation to use the latest guidelines developed by the Electric Power Research Institute (EPRI) and contained in EPRI Report NP-5479, "Applications Guidelines for Check Valves in Nuclear Power Plants," dated January, 1988. The reevaluation, performed on the 226 ASME Code check valves, also included a first time evaluation of an additional 34 balance-of-plant check valves considered important to reliability. These efforts resulted in the establishment of a check valve program population which currently consists of 106 check valves (72 ASME Code valves and 34 balance-of-plant valves), all of which are greater than 2.5 inches.

The inspectors selected a sample of 20 check valves (identified in the Attachment) from the following safety-related systems and then reviewed the associated P&IDs in order to establish with reasonable certainty that all safety-related check valves had been included in the evaluations: low pressure core spray, residual heat removal, diesel generator, reactor core isolation, HVAC-chilled water, control building chilled water, fuel pool cooling, and service water. No exceptions were identified.

2.2 Check Valve Program

RBS established and described their program in a document titled "Check Valve Program," Revision 0, dated July 14, 1989, now currently at Revision 3, dated January 15, 1992. The program contained the EEARs and memoranda developed in response to SOER 86-3, and is structured to be a predictive maintenance program in which the key elements are performance monitoring and valve disassembly. Performance monitoring consisted of the use of acoustic emissions monitoring (AEM) which is a non-intrusive examination method. Valve disassembly and inspection is required when AEM data indicates that valve degradation has reached a point where valve failure may be likely; an unexplained significant change has occurred in the acoustic signature of the valve; or a failure (or possible failure) of the valve has been identified by some other means. The program also addressed the use of Maintenance Procedure CMP-9173 for check valve disassembly and reassembly, and Engineering Procedure EDP-ME-78 which was developed for determining proper sizing and selection of check valves.

Initial AEM testing and evaluation was performed on 29 check valves between March 1990 and September 1990 (prior to Refuel Outage [RF]3), followed by

subsequent AEM testing and evaluation of an additional 24 check valves prior to the completion of RF4, which started March 1992. The balance are scheduled to be AEM tested and evaluated prior to the completion of RF5. The inspectors were informed, however, that 10 extraction steam check valves and 3 main condensate discharge check valves, all included in the check valve program, had been disassembled, inspected, and reassembled during this outage, therefore they may not be evaluated by AEM during the next outage.

Procedure PEP-0054, "River Bend Station Check Valve Program," Revision 0, dated June 15, 1992, provided guidelines and specific methodology for implementing the program. It also addressed requirements for accomplishing the maintenance history trending and performance monitoring programs. The procedure contained Attachment 1, "Valves Included In Check Valve Program," and Attachment 2, "Guidelines For Check Valve Acoustic Emissions Testing," which provided the methodology and criteria for acquisition and evaluation of check valve acoustic emissions data. Attachment 1 also noted which of the valves were included in the RBS inservice test (IST) program. The inspectors performed a comparison between the valves noted in Attachment 1 and the list of valves in the IST program. The inspectors determined from this review that Attachment 1 of the check valve program did not note all of the valves that were also included in the IST program. Further review and discussions with the IST and check valve program coordinators indicated that at least seven IST check valves were not shown in Attachment 1 as being in the IST program, and at least one valve was listed as being in the IST program which, in reality, was not listed. The inspectors expressed concern to the licensee in that these anomalies appeared indicative of a lack of coordination or information sharing between the two groups. It was additionally noted from review of Procedure PEP-0054 that copies of test packages were required to be forwarded to the IST coordinator for those check valve program valves that were included in the IST program. The failure to identify valves as being in the IST program would thus preclude the forwarding of the test information.

2.3 Check Valve Testing Program

2.3.1 Testing Methodology

The principal method of surveillance testing of check valves within the RBS check valve program is AEM. Under dynamic flow the acoustic emissions of a check valve are recorded and the acoustic signatures are analyzed for abnormalities that may indicate damage, wear and/or impending valve failure. The functional and leak rate tests are conducted as part of the IST program and form the other part of what would be considered a check valve program.

2.3.2 Review of Test Records

The inspectors reviewed 29 AEM surveillance test results of tests conducted prior to RF3. Each of the check valves had an associated AEM testing data sheet, check valve analysis data sheet, and record of valve signature tracings under various flows. Of the 29 check valves tested, 4 were evaluated by the cognizant engineer as unsatisfactory and scheduled for disassembly and

inspection during RF4. The required acoustic trace of each of the four check valves exhibited evidence of disc tapping and/or flutter. Due to the relatively small amount of industry experience with check valve non-intrusive testing and the small amount of test data available, no specific acceptance criteria was established. However, the evaluation of each valve tracing performed by the cognizant engineer was observed by the inspectors to be quite conservative, in that any aberration required disassembly.

In addition to the above, the inspectors selected 16 check valves from the AEM program in order to verify that each valve was also functionally tested under the licensee's IST program. The inspectors examined IST surveillance test data results for each of the selected valves (see IST check valve functional test listing in the Attachment to this report).

As a result of the above reviews, the inspectors determined that, (1) the non-intrusive AEM diagnostic testing methodology showed promise as a technique for assessing the operational readiness of check valves in water service; (2) the AEM testing, supplemented by IST functional testing, demonstrated that check valves within the program were capable of performing the required safety function; and (3) guidelines and positions contained in Generic Letter 89-04 were appropriately addressed by the licensee.

2.4 Maintenance Program

The inspectors reviewed aspects of the maintenance program for check valves to determine whether processes and programs existed to identify degradation before failure and whether appropriate corrective actions were taken to address problems based on the maintenance results.

As mentioned above, the RBS check valve program utilizes predictive maintenance which is established by performance monitoring using AEM. Check valves in the program are to be disassembled, inspected, and repaired at the first scheduled plant or system outage of sufficient duration should the AEM data indicate that significant or unexplained changes from previous data have occurred. In accordance with the RBS check valve program, Procedure PEP-0054, Revision 0, paragraph 4.1.3, a Condition Report (CR) must be generated whenever a check valve is identified as having experienced an excessive failure rate. Excessive failure rate is defined in Procedure PEP-0054 as any check valve experiencing any of the following conditions more than once in a 10 year period: required replacement of any internal component due to mechanical wear, a failure to operate upon demand, or the identification of a condition that would prevent the valve from performing its function. The inspectors noted following the inspection that paragraph 4.1.3 of Procedure PEP-0054, describing the requirements for generating a CR is inconsistent with the requirements for generating a CR, as specified in "Initiation and Processing of Condition Reports," Procedure RBNP-030, Revision 1, paragraph 5.1, where a CR is required with only one failure. The licensee's actions in response to this inconsistency will be reviewed in a followup inspection. This is an inspection followup item (458/9222-02).

Records showed that of the 29 check valves that underwent AEM prior to RF3, 16 showed some anomaly which caused the initiation of CR 90-0846. Evaluation of the AEM data resulted in the disassembly, inspection, cleaning, and reassembly of four check valves. During RF4, 24 check valves underwent AEM, resulting in the issuance of CR 92-0165. Evaluation of the AEM data resulted in 9 valves being disassembled, inspected, cleaned and reassembled.

The inspectors noted that currently, there is one maintenance procedure associated with check valves. Procedure CMP-9173, "Check Valve Rework," Revision 5A, dated June 4, 1992, provided the general instructions for the removal, disassembly, inspection, rework, reassembly, and reinstallation of check valves. The inspectors noted that the check valve program provided implementation schedules, one of which addressed the establishment and issuance of additional maintenance procedures specific to types of check valves.

2.5 Trending

The inspectors reviewed the trending requirements contained in Procedure PEP-0054, Revision 0. It was ascertained that a review of maintenance work orders (MWOs) was required to be performed at least once every 18 months to identify valves to be included in the check valve program because of mechanical wear or excessive failure rates. As noted in paragraph 2.4 above, a CR was required to be generated whenever a check valve experienced an excessive failure rate. Items to be addressed for a CR included root cause of the excessive failure rate, valve function, need for a modification to correct the root cause, and ability to use AEM on the valve.

The check valve coordinator informed the inspectors that he had reviewed MWOs generated for check valves up to January 1991, and that check valves identified to have an excessive number of failures had been included in the check valve program. No formal documentation existed, however, with respect to the results of the reviews. The inspectors were thus unable to verify that a viable trending program had been established.

2.6 Industry Information

The inspectors reviewed the licensee procedures for receipt, control and evaluation of regulatory and industry correspondence, Procedure NLP-10-006, "Processing and Tracking of Regulatory and Industry Correspondence," Revision 3, and Procedure EDP-AA-65, "Review and Processing of Vendor Technical Information," Revision 5. The inspectors considered the procedures sufficiently detailed to properly handle regulatory and industry correspondence.

The inspectors reviewed a number of the Licensing Department permanent record files for NRC Information Notices (INs), Bulletins and Generic Letters associated with check valves in order to assess the licensee's evaluations and applicable actions. The inspectors reviewed INs 88-70, 89-62, 90-03, 90-61, and 90-79, Bulletins 83-03 and 89-02, and Generic Letter 87-06. The

inspectors noted that the licensee had reviewed, determined, and documented that INs 89-62 and 90-03 were not applicable to the RBS. The licensee reviewed IN 88-70, concerning check valve IST program deficiencies, and issued a Statement of Action, RBG-35387 dated July 29, 1991. The Statement of Action stated that a review of all safety-related systems had been performed to ensure all safety-related check valves were included in the IST program and that each check valve was tested in its safety position. The inspectors reviewed Statements of Action, RBG-35723 dated October 8, 1991, and RBG-35616 dated September 16, 1991, which documented the review of INs 90-61 and 90-79, respectively. The inspectors determined that the licensee had reviewed and adequately documented their responses to the INs.

The inspectors reviewed the licensee's response to NRC Bulletin 89-02 concerning stress corrosion cracking of Type 410 stainless steel bolting in Anchor Darling swing check valves and valves of similar design. The licensee's response, RBG-31934 dated December 12, 1989, stated that no Anchor Darling swing check valves were used at RBS and that no Type 410 stainless bolting was used in similar valves based on a review of the bill of materials for swing check valves.

The response to NRC Bulletin 83-03, concerning check valve failures in raw water cooling systems for diesel generators, was reviewed by the inspectors. The licensee's plant staff evaluated the Bulletin in Memorandum S-CRB-7307 dated July 22, 1985, which stated the applicable check valves were included in the IST program and the surveillance test procedure would include both forward flow and backflow tests. The inspectors reviewed station operating procedure, STP-256-3301, Revision 6, "Division I Standby Service Water Valve Operability Test," and concluded that both forward and reverse flow tests were required for the check valves.

The inspectors determined that the licensee's response to Generic Letter 87-06 was timely and appropriate. Generic Letter 87-06 concerned periodic verification of leak tight integrity of pressure isolation valves. The licensee's response, contained in letter RBG-25995 dated May 26, 1987, stated that all pressure isolation valves in the plant required leak testing every 18 months in accordance with the Technical Specifications.

The inspectors concluded that the licensee had appropriately documented their review of each of the documents and responded to the NRC when required.

2.7 Design Application Review

A check valve design application and installation review was conducted by RBS to determine if: (1) the valves were of the proper type for the intended service and operating conditions, (2) the valves were properly sized for operating flow conditions, and (3) the valves were properly oriented and located a suitable distance from upstream components that cause turbulent flow.

The inspectors reviewed EEAR 87-R0404, initiated August 26, 1987, and completed March 2, 1988, which provided a summary of the design review of ASME Section III, Class 1, 2, and 3 check valves. The design review was performed in response to an INPO SOER 86-3, issued October 15, 1986, which recommended that a design review be performed on all check valves whose failure could result in degraded operation of a safety-related system. The design review identified check valves that were susceptible to failure and which should be monitored in the check valve program. The inspectors also reviewed EEAR 88-R0037, initiated January 14, 1988, and completed July 21, 1988, which reevaluated the 226 valves previously evaluated in EEAR 87-R0404 against EPRI application guidelines for check valves in nuclear power plants (EPRI Report NP-5479). The inspectors determined that the design reviews in response to SOER 86-3 had assessed the check valves for valve type, location with respect to sources of turbulence, size, and orientation. The inspectors noted that the design reviews did not include an evaluation of the proper selection of check valve component materials for their intended service. No exceptions to component material selection were, however, identified by the inspectors. The original design bases for component material selection were not reviewed as part of this inspection effort.

During the design review, the inspectors noted that eight of the piston check valves for the main steam safety relief valve accumulators were mounted in a vertical position instead of in a horizontal position. EEAR 87-R0404 identified that these valves were mounted vertically and recommended that reorientation of the valves to a horizontal position be considered if any of the eight valves failed a leakage rate test. One of the check valves (Tag 1B21*VF039E) failed the leakage rate test in May 1989. The valve internals were reworked and the valve repaired and retested in accordance with MWO 125211 and left in the vertical position. The inspectors did not find any indication in the MWOs or other related documentation of an engineering evaluation to consider relocating the check valves in a horizontal position as EEAR 87-R0404 had recommended. There was no apparent root cause determination of check valve failure. Additionally, the inspectors reviewed the Velan maintenance instructions for the piston check valves, SAP-058, "Supplementary Maintenance Procedure," Revision A, dated June 10, 1985, which stated that the piston check valves must only be installed with the flow arrow in a horizontal pipe run since the valves would not operate normally if installed vertically.

Criterion XVI of Appendix B to 10 CFR Part 50 and the licensee's approved quality assurance program description require that conditions adverse to quality are promptly identified and corrected. The apparent failure to evaluate orientation of the valves, after leak rate failures, in view of the manufacturer's recommendations to mount the valves in a horizontal position, and the recommendations in EEAR 87-R0404 was considered an apparent violation of Criterion XVI. However, the licensee implemented acceptable corrective action by preparing EEAR 92-R0067, dated June 18, 1992, to review the orientation of the eight piston check valves. The licensee contacted the valve vendor and obtained a fax from Velan valve, message number ND9397, dated July 3, 1992, which stated that the valves were acceptable in the vertical position as long as the spring was installed in the valve. The licensee

stated that springs were installed in the valves. The licensee explained during a subsequent discussion with Mr. Lorfing of GSU on July 22, 1992, that recommendations and requirements included in R Type EEARs (licensing issues) are normally tracked. The recommendation listed in EEAR 87-R0404 had not been tracked due to the second EEAR (EEAR 88-R0037) being generated for the check valve design review. The licensee had believed that the first EEAR had been incorporated into the second EEAR. The failure to track the recommendation in the first EEAR is considered to be an isolated occurrence. The violation is not being cited because the criteria specified in section VII.B.1 of the Enforcement Policy were satisfied.

Paragraph 2.2 of this report identified a concern that there was a lack of information sharing between the check valve program group and the IST group. During review of the test data for the 16 main steam SRV accumulator check valves, the inspectors determined that the check valve coordinator did not have the accurate information on SRV check valve failures. The coordinator's only means of obtaining check valve failure data was to sort MWOs by check valve tag numbers. In addition, the IST test records and MWOs were difficult to review to determine which component had ultimately been the cause of the leak rate test failure. Test records did not normally identify suspected component failure. Several MWOs may have been written in order to correct the failure and pass the test. Again, the inspectors considered this to be a lack of information flow from the IST group to the check valve group. The observation was provided to the licensee for consideration as may be appropriate.

The inspectors reviewed the leak rate test data and MWOs, generated due to test failures, for the 16 main steam SRV accumulators and their associated check valves. A detailed review of test data and MWOs was performed for RF2 and RF3. The inspectors also reviewed test data and MWOs for RF1. The check valves and accumulator tanks are ASME Section III, Class 2, safety-related components. The 16 SRV accumulator tank check valves had been procured with stellite seats, however, during RF1, the valve seats were replaced with soft seats due to excessive valve leakage during preoperational testing. During RF1, there appeared to be a number of leak rate test failures. Equipment Qualification Specification, DE-NE-003, dated March 25, 1990, qualified the soft seats for 5.29 years. The soft seats were replaced during RF4 prior to performing leak rate tests.

The inspectors reviewed Station Operating Procedure STP-202-3603, Revision 3, "ADS/SRV Accumulator/Check Valve Leak Rate Valve Operability Test." The purpose of this procedure was to verify that the leakage rate of the ADS/SRV accumulator subsystem did not exceed 1.0 standard cubic feet per hour (SCFH) and that the accumulator check valves were operable. The leak rate test was performed every 18 months during refueling outages. The boundaries for this leak rate test were the accumulator check valves on one side of the accumulator and connections to the solenoid valves of the main steam safety relief valves on the other side. The licensee stated that, prior to performing the leak rate test each refueling outage, the main steam safety valves were removed and replaced with refurbished valves. Therefore, an "as

found" leak rate test was not performed on the solenoid valve side of the accumulator subsystem and, once every 5.29 years, leak rate testing is only performed after replacement of soft seats.

During the review of the RF2 test data, the inspectors determined that two accumulator tank check valves failed to meet the 1.0 SCFH maximum allowable leakage rate and two accumulator tanks had excessive leakage. The valves that failed were Tag Numbers 1B21*VF039C (ADS Valve) and 1B21*VF039E (ADS Valve). The accumulators that failed leak tests were 1B21*TKA003K (ADS accumulator) and 1B21*TKA004G. Two of the seven ADS check valves and one of the ADS accumulator tanks failed to meet their leakage rate requirements during RF2 testing. The plant is analyzed for only one inoperable ADS relief valve during a small break LOCA. This condition was not reported. During a July 17, 1992, telephone call, the licensee referenced NUREG 1022, which stated that the time of failure during surveillance testing for reportability considerations occurs at the time of discovery unless there is other firm evidence, based on a review of relevant information, to believe otherwise. The licensee stated that therefore, the failure of the accumulator components was identified during a refueling outage and they were not required to be operable at the time of discovery. Region IV informed the licensee during a subsequent telephone call on July 22, 1992, and based on discussions with Office for Analysis Evaluation of Operational Data, that guidance in NUREG 1022 would be considered appropriate for a random single isolated failure to meet a surveillance requirement. In this case, there had been multiple failures which resulted in three of seven ADS relief valves that may not have been operable, a condition which was not analyzed, and therefore this condition was considered reportable by the staff. River Bend Technical Specifications, Section 3.5.1, requires that seven ADS valves are required to be operable when the reactor steam pressure is greater than 100 psig. The failure of these components in the "as found condition" may have existed while the equipment was required to be operable. The repairs to the components that failed tests were documented in MWOs as follows:

Component Tag No.	MWO No.
1B21*TKA004G	133420, 125239, 125295
1B21*VF039C	125206
1B21*VF039E	125211
1B21*TKA003K	125201, 125240, 125296

During RF3, two main steam safety relief valve accumulator tanks failed leak rate testing. The tanks, numbers 1B21*TKA004G (Safety Relief Valve 1B21*RVF041L) and B21*TKA004L (Safety Relief Valve B21*RVF047O) had leaks from the drain plug and pipe plug respectively. The leaks were repaired on MWOs 146615 and 137347.

The inspectors asked the licensee, if an operability review had been performed or a CR prepared when the check valves and accumulator tanks failed tests considering that multiple components had failed tests. The licensee stated that CRs had not been generated, no operability review had been performed

since the plant was in cold shutdown, and Licensee Event Reports had not been prepared. The inspectors reviewed RBS Station Operating Procedure ADM-0019, Revision 8, "Initiation and Processing of Conditions Reports." The procedure requires CRs to be used as a means to identify problems or conditions that affect components. In accordance with the procedure, a CR shall be generated when repair/replacement of an ASME item is required due to failure, for conditions that require a submittal of a Licensee Event Report, and if an equipment failure is detected which may have existed while the equipment was required to be operable. Criterion V of Appendix B to 10 CFR Part 50 requires that activities affecting quality shall be prescribed by documented procedures and shall be accomplished in accordance with these procedures. The licensee's failure to initiate CRs is considered an apparent violation. (458/9222-01)

The inspectors reviewed Procedure EDP-ME-78, "Guidelines for Sizing and Selecting Check Valves for Use at River Bend," Revision 0, dated April 17, 1991. The procedure was prepared for the purpose of procuring new or replacement valves. The inspectors found the procedure to be comprehensive.

3 EXIT INTERVIEW

Exit interviews were conducted on June 19 and July 8, 1992, with the personnel denoted in paragraph 1 in which the inspection findings were summarized. The licensee did not identify as proprietary any of the materials provided to, or reviewed by, the inspectors during this inspection.

ATTACHMENT

Check Valve Sample

Mark No.	Size	Fluid	System
CSL*V10	4"	Water	Low Pressure Core Spray
E12*VF046A	4"	Water	Residual Heat Removal
E12*VF046B	4"	Water	Residual Heat Removal
E12*VF050B	10"	Water	Residual Heat Removal
E51*VF040	12"	Steam/Water Mix	Reactor Core Isolation Cooling
EGA*V148	6"	Air	Diesel Generator
EGA*V163	3"	Air	Diesel Generator
EGA*V166	3"	Air	Diesel Generator
HVK*V69	6"	Water	Control Building Chiller Water
HVN*V544	6"	Water	HVAC Chilled Water
HVN*V546	6"	Water	HVAC Chilled Water
RHS*V34	14"	Water	Residual Heat Removal
RHS*V64	14"	Water	Residual Heat Removal
RHS*V65	14"	Water	Residual Heat Removal
SFC*V41	12"	Water	Fuel Pool Cooling
SWP*V136	8"	Water	Service Water
SWP*V143	8"	Water	Service Water
SWP*V144	8"	Water	Service Water
SWP*V200	18"	Water	Service Water
SWP*V201	8"	Water	Service Water

IST Check Valve Functional Test Verification

STP - 256-3301, Revision 6
STP - 256-3302, Revision 5
STP - 204-3301, Revision 5
STP - 204-6304, Revision 0
STP - 204-3302, Revision 0
STP - 205-3301, Revision 5
STP - 209-3301, Revision 5
STP - 209-3302, Revision 5
STP - 309-3304, Revision 5
STP - 410-6301, Revision 5