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ORIGINATOR: 1.4. Snyder Date 1/15/	88 Section RTP Phone 3549						
SOBIATIONS	IN Mark 4/2 1/15/88						
Name of Responsible Section	RSPC Signature Date						
Technical Review Required?	Responsible Section Supervisor Date (Signature AFIER any required Technical Review)						
PRINCIPAL MANAGERS CONCURRENCE SIGNATURES DATE	AFFECTED SECTIONS CONCURRENCE SIGNATURES DATE						
Assistant to Site Director	Operations (U2 Supt)						
Site Planning & Scheduling	Vendor Manual Coordinator						
Site Services Hanager	Fire Protection Engineer						
Manager of Site Licensing	Safety Supervisor						
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Project Hanagement Hanager	RADCON Supervisor						
Project Engineer (DNE)	Security						
Hodifications Manager	PORS Supervisor						
Haterials & Procurement Svcs Mgr	Training Supervisor						
Financial Services Manager	Section:						
Hanager:	Section:						
QA Review Required? [X] Yes [] Ho							
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For Instructions approved by a Section Supervisor,	mark the following approvals "NA."						
FORC Review required? [X] Yes []	8) T Styludos 2/24/89						
PORCharman Managers Aby Community No. Date	Site Director (Spyrs only) Date						
Prant Manager or PORC Minutes No. Date							

Retention Period: Lifetime 2100p General Revision FOR INFORWATION ONLY

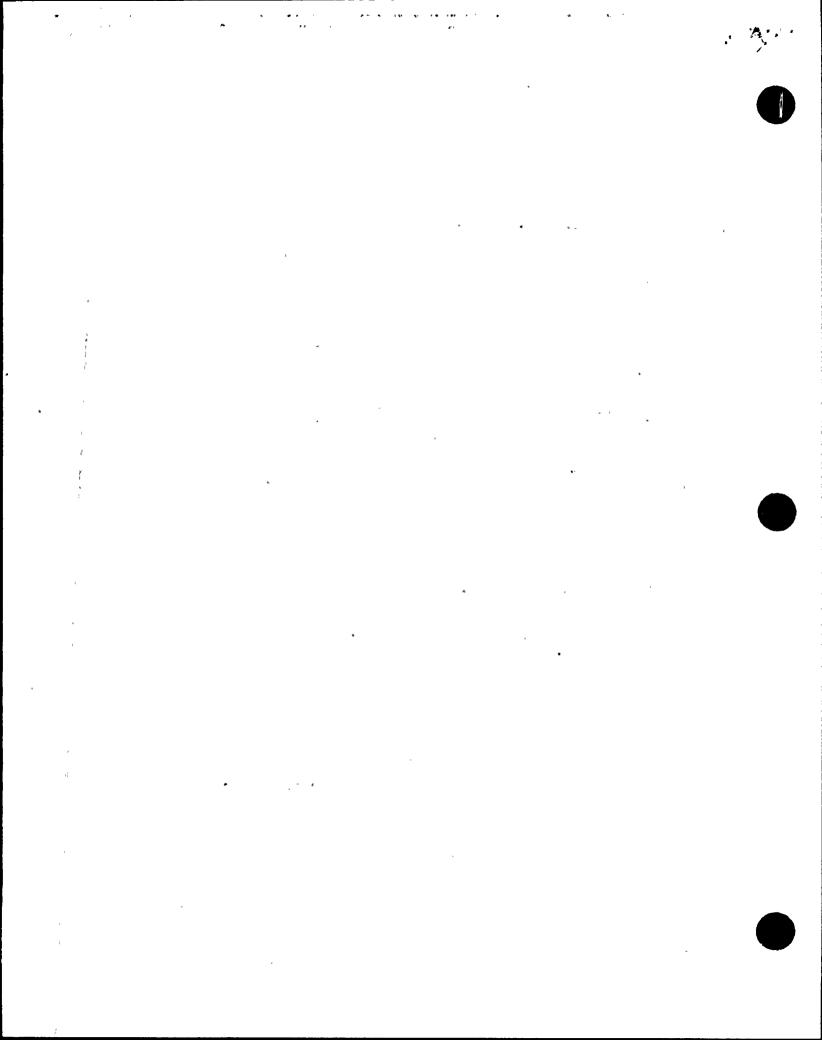
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HISTORY OF REVISION/REVIEW

REV.	DATE	REVISED PAGES	REASON FOR CURRENT REVISION
0	02/03/87	All	New procedure establishing the quidelines to identify test requirements for systems in the Restart Test Program.
1	04/22/87	A11	General revision to incorporate clarifications and other program inprovements.
2	09/22/87	1-23, 26, 27, 29	To incorporate clarifications and other program improvements. Change Design Baseline Engineering(DBE) to Design Baseline and Verfication Program(DB&VP).Forms 88,89,153
3	12/28/87	1,2,4,5,6,8-21, 24,25,27-30 Forms; 86,87, 89,90	Incorporation of corrective Actions for CAQRs BFQ-870534 and BFP-870541 and incorporations of program improvements. (FORM SDSP-153 was deleted)
4	02/24/88	1,4,10,11,12,16	(1) Incorporates additional corrective actions under BFQ-87-0534 (2) Incorporates program improvements (3) updates references



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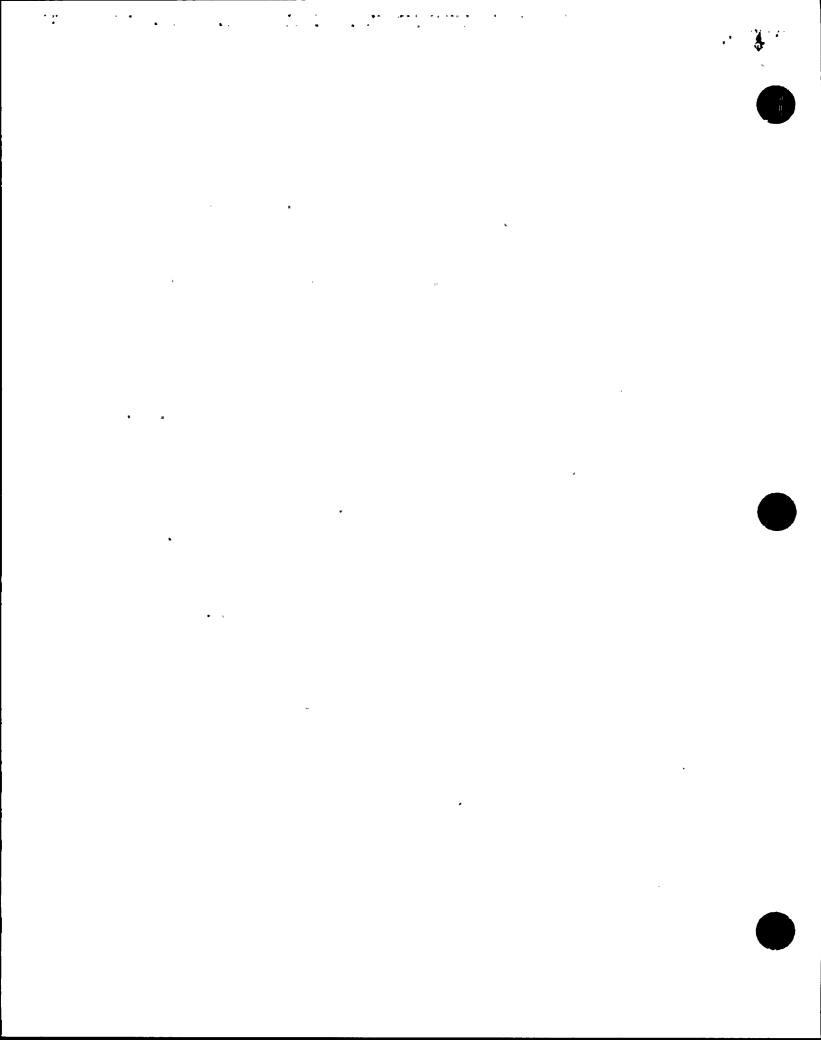
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DEVELOPMENT OF SYSTEM TEST SPECIFICATIONS

1.0 PURPOSE

The purpose of this standard practice is to describe the method by which System Test Specifications (STS) are prepared, reviewed, and approved to support the Restart Test Program (RTP) during Unit 2 Cycle 5 startup.

2.0 SCOPE

System Test Specifications are to stipulate the test requirements for selected systems and other interrelated systems for the BFN Unit 2 Startup. System Test Specifications are developed from elements of the Design Baseline and Verification Program Test Requirements and from a system review by the RTP Engineer. The Restart Test Program list of systems requiring test specifications are identified in Attachment 1.

The STS is the document that defines the functions of a system that must be tested, and the basis for the requirement. These test requirements are implemented by test instructions as described by SDSP-12.1, "Restart Test Program".

All systems will be addressed using a graded approach, i.e., some systems will receive a more extensive review and test than others. The graded approach will be implemented by separating all systems into one of three groups according to the following guidelines:

- Group 1: Critical to safe operation or shutdown of plant. Testing requirements determined primarily be Design Baseline and Verification Program (DB&VP).
- Group 2: Support to plant operation. Few or no test requirements specified by Design Baseline and Verification Program; majority of test requirements determined by RTP system review.
- Group 3: Systems not directly supporting plant operation and not important to safety. Little or no testing will be specified.

Group 3 Systems will not have an STS prepared but will be addressed by the requirements of the System Check List per SDSP-12.1.

3.0 REFERENCES

3.1 Reference Documents

- 3.1.1 NEP-10.4, Test Scoping Documents
- 3.1.2 BFNP PI 86-26, Baseline Evaluation Test Requirements

3.2 Source Documents

- 3.2.1 NQAM Part III, Section 1.1, Document Control
- 3.2.2 Nuclear Performance Plan, Volume III, Section 8

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3.3 Implementing

- 3.3.1 SDSP-12.1, Restart Test Program
- 3.3.2 PMI-7.1, Plant Operations Review Committee

4.0 DEFINITIONS/ABBREVIATIONS

- 4.1 System Test Specification (STS) A document specifying the minimum required testing to be performed on selected systems for the Unit 2 Cycle 5 Restart Test Program.
- 4.2 <u>Test Requirements</u> An input to the STS that can come from two sources; from the Design Baseline Evaluation (DBE) Program as system test requirements, and from the system review process performed by the RTP Engineer and System Engineer.
- 4.3 Restart Test Program (RTP) Administrative program established by TVA to restart Browns Ferry Nuclear Plant (BFN) Unit 2.
- 4.4 RTP Test A system(s) test procedure written to accomplish the testing identified by the STS. RTP Tests may use existing plant procedures and/or generate new tests as required by the STS.
- 4.5 <u>Joint Test Group (JTG)</u> A group of site personnel acting as a Plant Operations Review Committee (PORC) subcommittee with authority to review STS's, RTP tests, and revisions to RTP Tests and STS's as described in PMI-7.1, Plant Operations Review Committee.
- 4.6 RTP Test Engineer/Test Director The person(s) responsible for assigned STS and RTP test preparation, and RTP test conduct.
- 4.7 <u>Plant System Engineer</u> The plant engineer assigned system cognizant responsibilities.
- 4.8 Design Baseline Test Requirements Document (DBTR) A design document that identifies the functional testing required on a system to demonstrate the safe shutdown design requirements for that system.
- 4.9 [DNQA] RTP Procedures Review Group (PRG) An independent group of RTP Engineers responsible for providing a review of RTP System Test Specifications, Test Procedures, and Test Results. [BFQ-870534]

5.0 BACKGROUND

This practice describes the method used to develop system test specifications for systems tested in the Restart Test Program. Test specifications shall include input from the DB&VP and from the RTP System Review based on the guidelines of this practice.

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6.0 INSTRUCTION

6.1 STS Preparation and Format

6.1.1 Form SDSP-86, System Test Specification Cover Sheet, shall be filled out by the Cognizant RTP Test Engineer. Unique identifiers for STSs shall be assigned by the following method:

where a is the unit number,

b is Browns Ferry Nuclear Plant,

c is System Test Specification, and

d is the system number.

6.1.2 The system number (d) shall always be the primary system to be tested; support or other included systems shall not be referenced in the STS unique identifier. Example system number designation for integrated tests are as follows:

L/L - Loss of Power/Loss of Coolant Accident (LOP/LOCA)

BUC - Backup Control Test

ICF - Integrated Cold Functional Testing

The format for these STS's may deviate from the standard format since they are unique cases.

- 6.1.3 Form SDSP-88, System Test Specification Revision Notice Log, follows the STS Cover Sheet. Use this form as needed when revisions are made to STS's (refer to Section 6.4, Changes/Revisions).
- 6.1.4 The STS Table of Contents follows the STS Revision Notice Log. Include the following sections as a minimum:

(1) Section Title

1.0										Test Objectives
										Not used
										Not used
4.0										Not used
										Test Requirements
3.0	5.1									
	5.2	•	٠	٠	•	٠	•	•	•	Nuclear Plant Reliability Data
										System and Maintenance Request
										History Review
	5.3									Employee Concerns, Licensing
	2.5	•	•	•	•	•	٠	•	•	
										Commitment, and CAQ Program
										Review
	5.4	•						•		DB&VP Test Requirements
	5.5									Vendor Recommendation Review
Append										References
										As Needed
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⁽¹⁾ This section numbering system is used to correspond to the associated RTP test section numbering system.

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6.1 STS Preparation and Format (Continued)

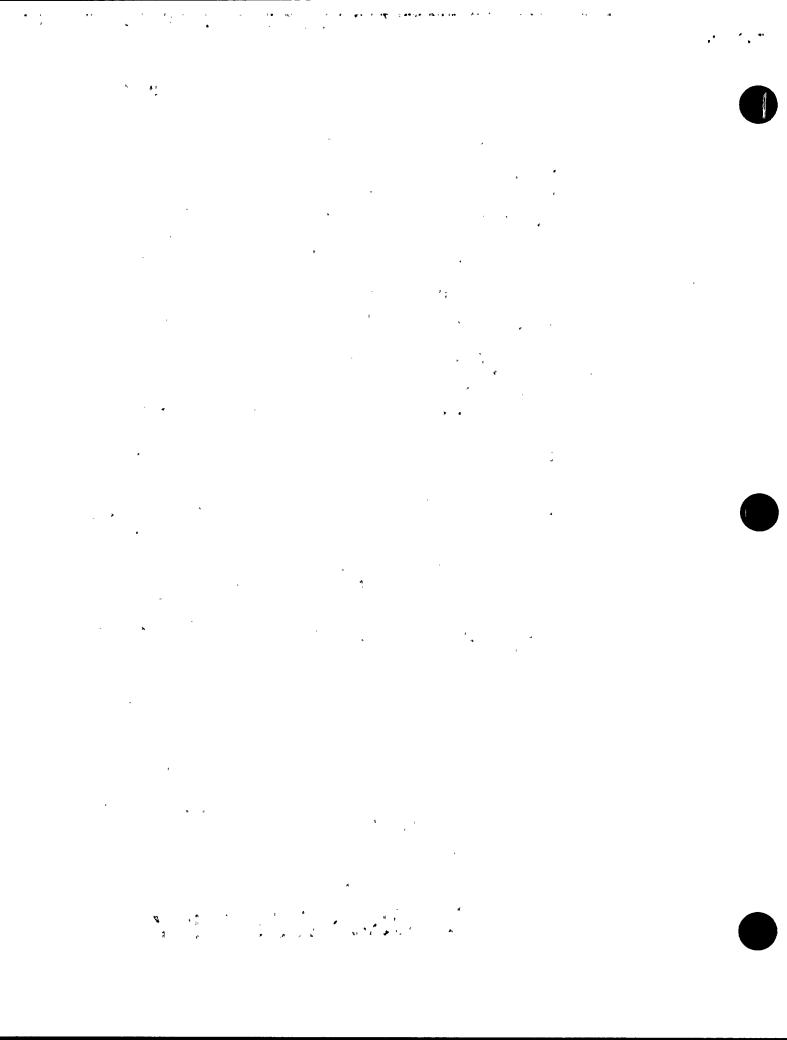
- 6.1.5 List the objectives of the STS clearly and individually.

 Objective 1.0 should be a general statement of the intent the STS, i.e., to identify all tests that verify the system(s) performs as-designed to meet the safe shutdown requirements identified by the Design Baseline and Verification Program and the system review. All supporting systems addressed by this STS shall be uniquely identified by title and number. Other specific objectives shall be numbered sequentially starting with 1.1 and may include the following:
 - (a) Individual system DB&VP test objectives as listed in Design Baseline Test Requirements,
 - (b) Review of system modifications,
 - (c) Identification of testing to resolve system employee concerns, licensing commitments, and CAQ's, when applicable,
 - (d) Review of vendor recommendations for test requirements,
 - (e) Plant System Engineer's test requirements,
 - (f) Additional objectives as identified by the RTP system review.

6.2 Test Requirements Determination

The System Test Specifications (STS) will be used to identify any test requirements resulting from the DB&VP test requirements and the RTP review. The RTP test instructions will be generated in accordance with SDSP-12.1. These test instructions will identify the SI or other test document used to demonstrate each test requirement listed in the STS. It is recognized that Surveillance Instructions or other test procedures have been listed within approved STSs in accordance with previous revisions of this instruction. The RTP test instruction contains the controls for the identification and performance of those SIs and other test procedures. Therefore the references to these SIs and test procedures will not be included in the STS. For cases where the STS is approved, references to the SIs or test procedures shall be removed on the next revision of the STS.

Test requirements shall be identified and categorized for each system(s) requiring an STS by the RTP Test Engineer as assigned by the RTP Manager. The following instructions shall apply in determining these requirements (Section 5.0 of the STS). Refer to Attachment 2 for an example format of Section 5.0 of the STS.



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6.2 Test Requirements Determination (Continued)

- 6.2.1 Engineering Change Notice (ECN) Review Section 5.1 of the STS
 - 6.2.1.1 The RTP Engineer shall review U2C5 ECN's on his assigned system to assess the possibility of interaction between two or more separate modifications. This evaluation should specifically address functions of a system not verified as a result of other test requirements.
 - 6.2.1.2 If it is determined that additional testing is required, the ECN's shall be indicated and the additional testing required shall be described. See Attachment 2 for an example of the format for this listing.
- 6.2.2 Nuclear Plant Reliability Data System (NPRDS) and Maintenance Request (MR) History Review

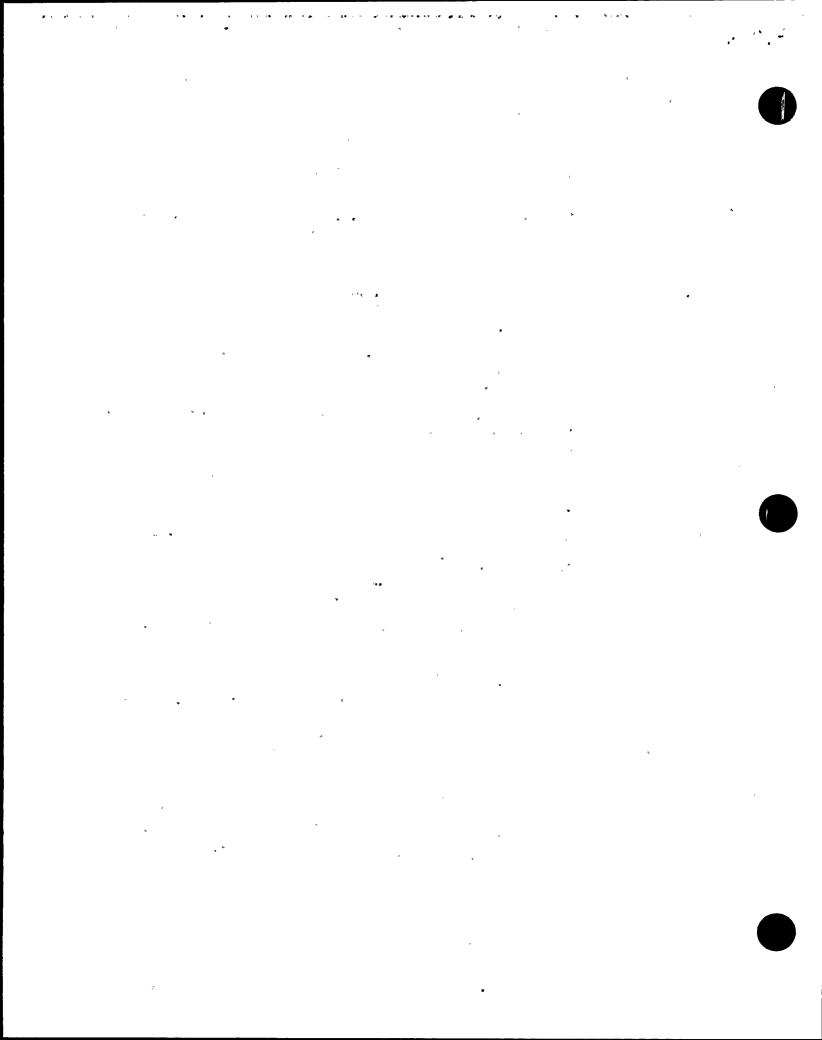
The RTP Test Engineer shall review the NPRDS Failure Reports and MR history reports to determine if it is possible to perform a test which will identify the cause or diagnose the reason for repetitive equipment or component failures. Review data may be acquired from any combination of the two (2) documents. The review shall cover the time period from the beginning of Unit 2, Cycle 5 until the development of the STS. Reports from Units 1 and 3 may be used to supply operational experience data. Keep in mind that the NPRDS Failure Report contains CSSC equipment and component failure data only. Items identified by this review that require Test Requirements shall be listed in accordance with the format specified in Attachment 2.

6.2.2.1 Maintenance Request (MR) History Report

Review for test requirement determination should be based on the following criteria:

- (a) More than 2 failures classified by equipment/component identification in a 1 year period.
- (b) More than 2 failures classified by the type of failure in a 1 year period.
- 6.2.2.2 NPRDS Failure Report

The NPRDS Failure Report contains a repetitive failure criteria in accordance with Institute of Nuclear Power Operations (INPO) guidelines. Each item reported shall be reviewed by the RTP Engineer for test requirement determination.



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- 6.2 Test Requirements Determination (Continued)
 - 6.2.3 Employee Concerns, Licensing Commitment, and CAQ Program Review Section 5.3 of the STS

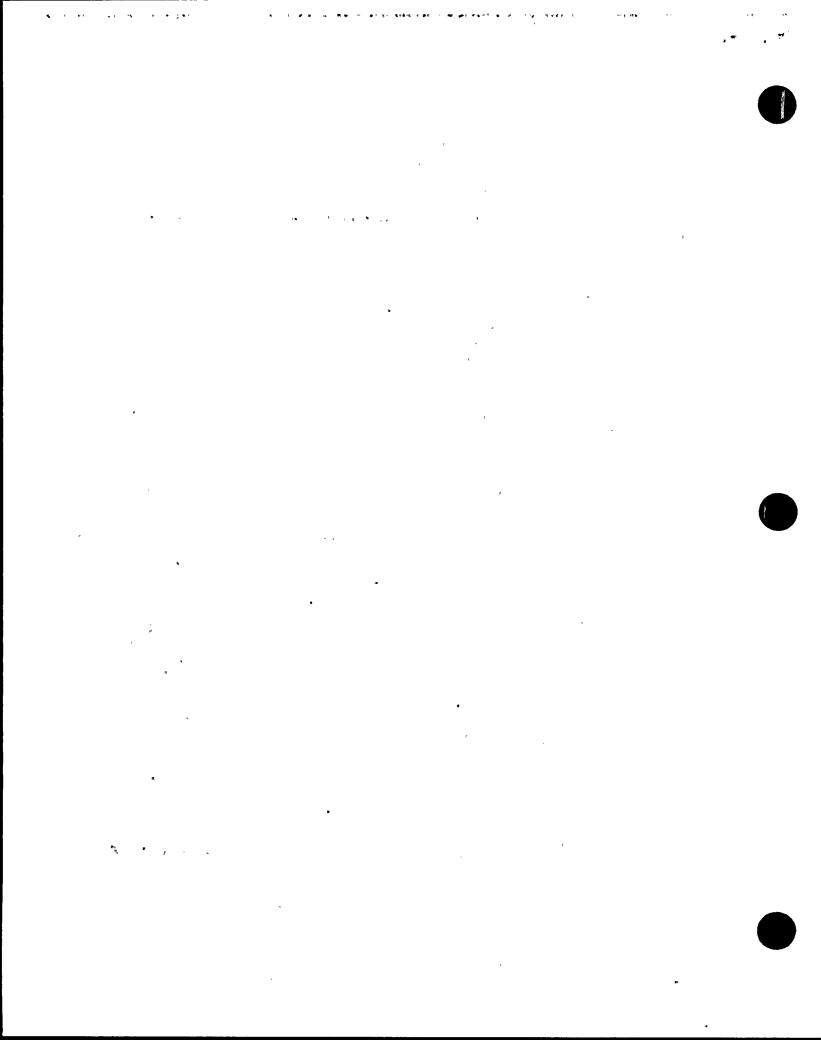
The Restart Test Program will address in the STS Licensing Commitments, Conditions Adverse to Quality, and Employee Concerns that identify the need for testing or that can be resolved by the conduct of a specific test. An assigned RTP Engineer will interface with each of the Licensing, Employee Concerns Program, and Quality Assurance groups. The groups will review the documentation available within the scope of these programs to identify specific concerns, commitments, or quality documentation where the need for a test is identified, or a specific test will resolve the commitment, concern, or quality condition. The list of possible testing requirements will be given to the various RTP Engineers responsible for the generation of the STS who will evaluate any identified items. The STS will identify any commitments, concerns, or quality conditions that result in test requirements. The format is shown in Attachment 2.

- 6.2.4 DB&VP Test Requirements Section 5.4 of the STS
 - 6.2.4.1 The Design Baseline and Verification Program conducted by DNE issues System Test Requirements for use by the RTP and incorporation into the STS.
 - 6.2.4.2 The RTP and System Engineers shall review the Design Baseline Test Requirements for conformance to the FSAR, Technical Specifications as designed drawings as appropriate, and as-constructed drawings for the ability or practicality to perform the testing without unnecessary risk to equipment or personnel safety.
 - 6.2.4.3 Comments can be resolved by either a revision to the Test Requirements document or by an official memo from DNE stating the appropriate changes that will be incorporated in the next revision to the Test Requirements. DNE has the final authority for determining DB&VP Test Requirements.
 - 6.2.4.4 Any portion of the Design Baseline Test Requirements for the system(s) listed in the STS objective, that will be met by another STS, must be identified in Section 5.0 with the STS number that will satisfy that portion of the DB&VP Test Requirements.

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- 6.2 Test Requirements Determination (Continued)
 - 6.2.4.5 If a STS covers a portion of DB&VP Test Requirements for system not listed in the STS objective, the RTP Test Engineer will list in Section 5.0, the source of the Test Requirements.
 - 6.2.4.6 The RTP department shall maintain a file with copies of all issued revisions of the Design Baseline Test Requirements for each system. The Test Engineer will ensure all issued revisions from the DB&VP have been reviewed and documented prior to the approval of the RTP test results package.
 - 6.2.5 Vendor Recommendation Review Section 5.5 of the STS
 - 6.2.5.1 The objective of this review is to determine if there are any system or component tests that are suggested by the vendor which will aid the RTP Test Engineer in meeting his STS objective. Only explicit recommendations for testing which are not currently addressed adequately by existing on-site procedures or have not been previously addressed by reviews within the RTP program, will be considered. An example would be any testing or operational checks required as a result of a long period of inactivity. The review should not be used to determine if recommended preventative maintenance or operating practices are being followed. These reviews will be conducted using available "controlled" or "conditional use" vendor information.
 - 6.2.5.2 List any reviewed vendor documents from which test requirements have been identified. This listing will be done in accordance with the guidance provided in Attachment 2. Suggested sources of information include vendor manuals, Service Information Letters (SIL), design drawings, or other official vendor documents. Only major components, assemblies, or systems need to be addressed, e.g. ECCS pump motors, diesel generators, SBGT Filter Trains, CRD system.



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6.2 Test Requirements Determination (Continued)

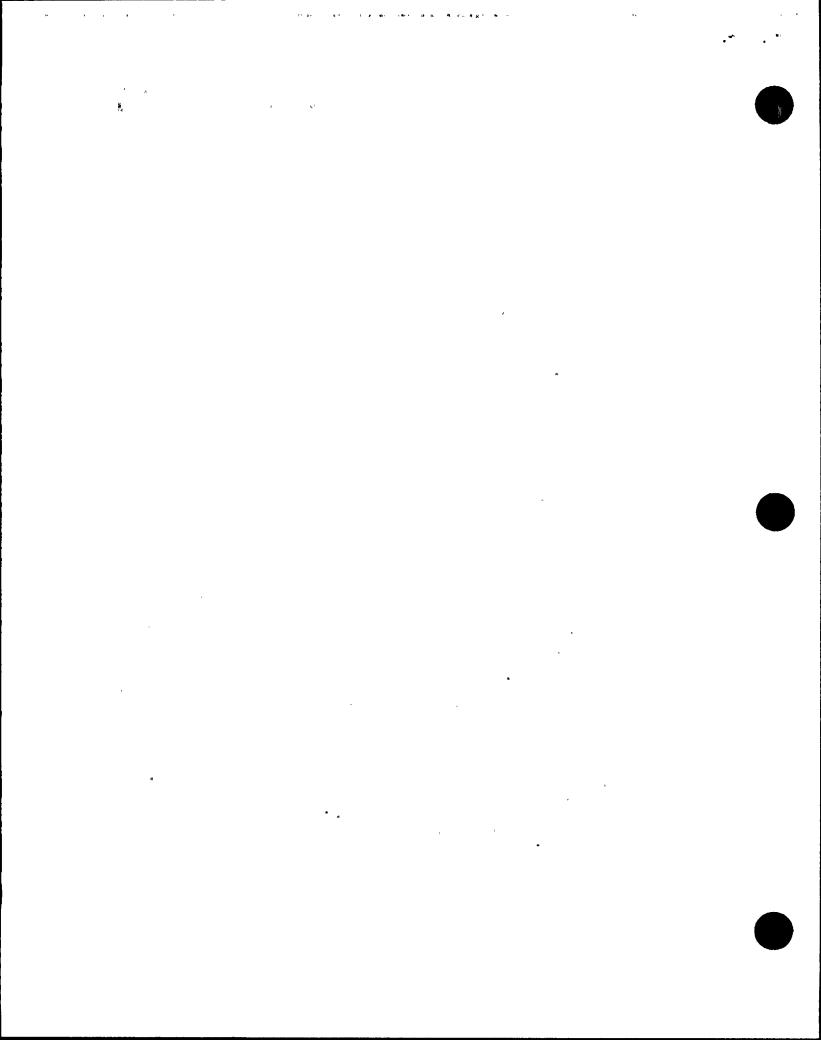
- 6.2.6 Additional Test Requirements
 - 6.2.6.1 Additional testing identified as part of the system review process can be added as additional sections to part 5.0 of the STS.

6.2.7 Appendices

- 6.2.7.1 Appendix A should be designated for references used in preparing the STS. References may include drawings, vendor information, DB&VP documents, the Final Safety Analysis Report, Technical Specifications, and any others as specified by the RTP Test Engineer.
- 6.2.7.2 Additional Appendices may be added as needed, and all appendices shall be listed on separate pages.

6.3 Review and Approval

- NOTE: The RTP Manager or engineers may act as the JTG Secretary when necessary.
- 6.3.1 [DNQA] Restart Test Program generated System Test Specifications, Test Instructions, and Test Results Packages will be subject to an internal review. These reviews will be performed by an internal RTP Procedure Review Group (PRG). The RTP Manager will staff the group from RTP personnel, including a designated lead, as necessary to support the required reviews. The duties of those assigned to the PRG should be limited to those activities that do not interfere or conflict with the performance of quality reviews. The PRG will conduct reviews as outlined in this instruction to support the approval of RTP System Test Specifications. The group may conduct meetings and keep a log of meeting activities to facilitate the resolution of comments identified in the review process. [BFQ-87-0534]
- 6.3.2 The RTP Engineer shall submit the STS for typing. After the typed STS is edited the STS will be reviewed by the RTP Procedures Review Group (PRG). The PRG will perform an independent review of the STS for conformance to this procedure and technical accuracy. The PRG reviewing engineer should note any comments on a Form SDSP-90, Comment Control Form (attach additional sheets as needed), and forward comments to the RTP Engineer when complete.
- 6.3.3 The assigned RTP and PRG Engineers shall resolve the comments.
- 6.3.4 The assigned RTP and PRG Engineers shall sign on the original STS cover sheet after retyping. The RTP Manager shall sign on the STS cover sheet noting that the STS is ready for JTG review.



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6.3 Review and Approval (Continued)

- 6.3.5 Copies of the STS stamped "Review Copy Only" on the STS cover sheet shall be made and distributed with Form SDSP-89, Review Transmittal Sheet and Form SDSP-90, Comment Control Form, to each cognizant Joint Test Group (JTG) member by the JTG Secretary. The JTG Secretary shall fill out Form SDSP-89, Review Transmittal Sheet noting the STS number, title, revision number, review deadline, and date transmitted.
- 6.3.6 JTG membership is identified in PMI-7.1, Plant Operations Review Committee. Each reviewing member of the JTG should review the STS as applicable to their cognizance. Review comments shall be made by filling in the control comment form (attach additional sheets as needed). Each JTG reviewer will sign or initial and date the Review Transmittal Sheet, and check the appropriate box denoting "With Comments" or "Without Comments" and return to the RTP department prior to the review deadline. The comments shall be distributed to the RTP Test Engineer for resolution.
- 6.3.7 Resolution of Reviewing Member(s) comments may be documented on the comment control form in the following manner: I = Incorporated, O = Omitted. Comments which are determined to be omitted should include a brief explanation.
- 6.3.8 RTP Test Engineers shall notify the JTG Secretary upon resolution and incorporation of all review comments that are agreed upon between the reviewing member(s) and the RTP Test Engineer. Review comments that remain unresolved will be handled in accordance with Step 6.3.11. The JTG Secretary will schedule and notify the JTG members for a meeting to review and recommend approval to PORC.
- 6.3.9 The JTG shall have authority to resolve review comments by majority vote at JTG meetings. The JTG Secretary shall note when this occurs in the JTG Meeting Minutes. The RTP Group will maintain a file of STS Comment Control Forms and resolutions until the final RTP Results Package is approved by the JTG.
- 6.3.10 If the STS is recommended for the Plant Manager's signature by the JTG, the JTG Secretary shall present the original STS to the JTG Chairman for his signature. The JTG Chairman shall note the review by signature and date in the appropriate space on the STS Cover Sheet, Form SDSP-86.

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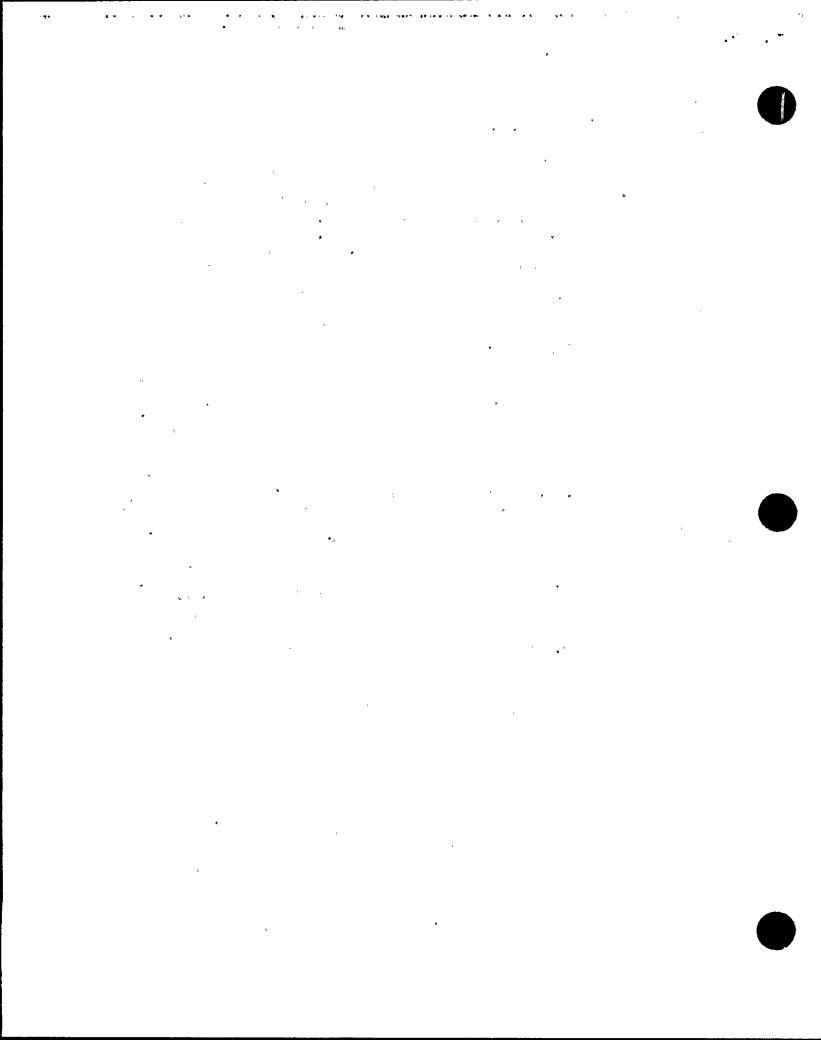
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6.3 Review and Approval (Continued)

- 6.3.11 The JTG Secretary, or other responsible RTP Section Representative, shall deliver the original JTG reviewed STS to the Plant Manager for approval. Disapproved STS's shall be returned to the RTP Engineer for comment resolution. Disapproved system test specifications shall be resubmitted to the JTG after resolution of the reasons for disapproval.
- 6.3.12 The JTG Secretary shall note STS review and recommended approval in the meeting minutes and submit the minutes for review by PORC in accordance with PMI-7.1, Plant Operations Review Committee.
- 6.3.13 The approved original STS shall be returned to the RTP Section. The assigned RTP Test Engineer shall be issued a copy of the approved original and stamp each page in red "Official Copy". The RTP Engineer shall utilize the official STS for preparation of the RTP procedure. Distribution shall be made as listed on Form SDSP-86, and each STS cover sheet shall be stamped "For Information Only".
- 6.3.14 The RTP Section shall maintain a copy of the original approved STS and forward the original not stamped to DP&CU for maintenance in the master file. A copy with the STS cover sheet stamped "Approved for Use" shall also be sent to Nuclear Services DCU in Chattanooga.
- 6.3.15 Any additional copies made for other requesting departments or organizations will have the STS cover sheet stamped "For Information Only" prior to distribution.

6.4 Changes/Revisions

- 6.4.1 Changes to approved STS's shall be made utilizing Form SDSP-87, STS Change Notice. The RTP Test Engineer shall fill out Form SDSP-87 noting the STS Change Number (CN-1, CN-2, etc.), STS Number and revision, system name, the change description, affected STS pages, and the reason for the change.
- 6.4.2 Non-Intent changes to an approved STS are changes which do not modify the objectives or intent of baseline evaluations. DNE calculations, or System Test Requirements and shall be documented on a STS change notice. These changes are made at the discretion of the Test Engineer, reviewed by the RTP Procedure Review Group and approved by the RTP Manager, the JTA Chairman, and Plant Manager within 14 calendar days.

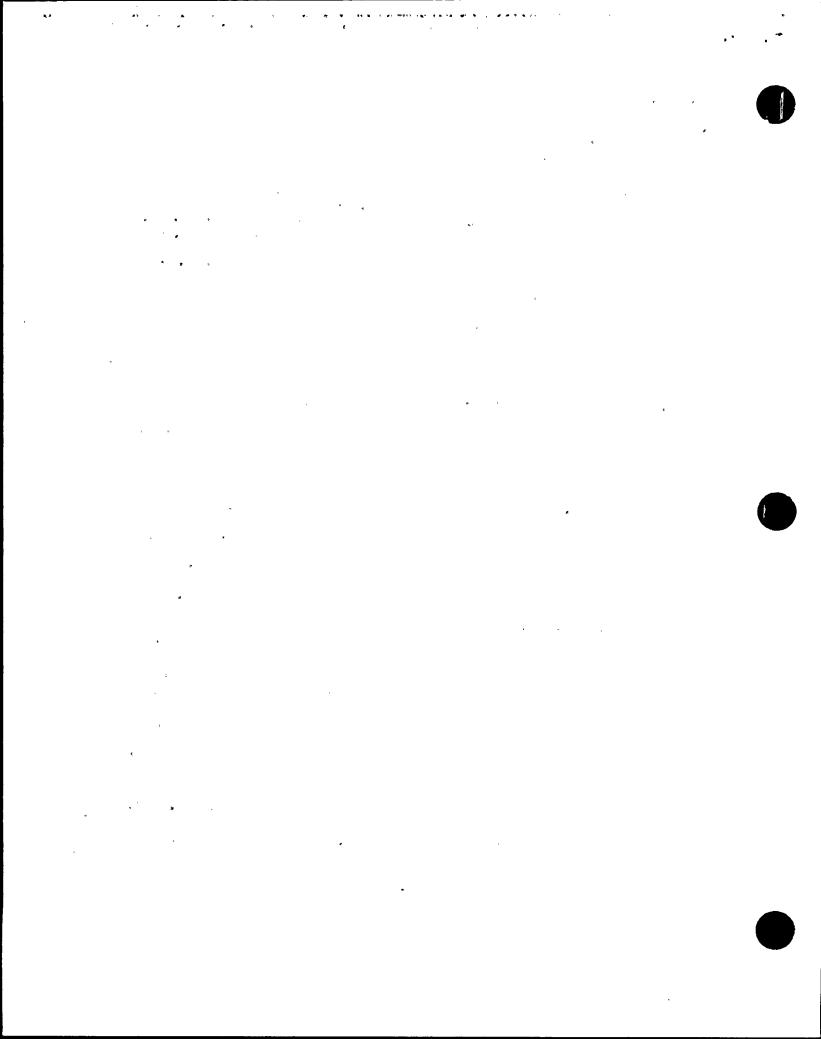


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6.4 Changes/Revisions (Continued)

- 6.4.3 Proposed STS changes other than described in Paragraph 6.4.2 shall be distributed to JTG members for review. Any identified comments shall be resolved by the RTP Engineer. The change shall be submitted to the JTG for approval. JTG review and approval shall be documented with the JTG chairmans signature on the Form SDSP-87. Approved STS changes shall be submitted to the Plant Manager for signature. Disapproved changes shall be resubmitted to the JTG after resolution of the reason for disapproval. Approved changes shall be distributed in the same manner as the original STS.
- 6.4.4 After STS change approval, the RTP Test Engineer shall implement the changes on the affected sections of the STS in black ink and then initial and date by each change. The original approved STS Change Notice will be kept with the Official Copy STS. A copy shall be sent to DP&CU for maintenance in the master file.
- 6.4.5 When the number or magnitude of changes becomes large or causes the STS to be cumbersome or difficult to interpret, the changes shall be incorporated as a revision to the STS.
- 6.4.6 Revision to STS's shall be made using the STS Revision Notice Log (Form SDSP-88) with STS revision number, date of revision and changes incorporated. If the STS is to be retyped all pages shall be indicated by the new revision number and a revision bar drawn vertically in the right hand margin of each page or subsection which the change affected.
- 6.4.7 Revised STS's shall be reviewed, approved, and distributed in the same manner as the original STS.



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7.0 RESPONSIBILITIES

7.1 <u>Division of Nuclear</u> Engineering (DNE)

- specify system test requirements in the form of Test Requirement documents based on the DB&VP
- provides a DNE Member for the Joint Test Group (JTG)
- 7.2 Quality Assurance,
 Unit 2 Maintenance
 Superintendent, Unit 2
 Operations, and Modifications
- each provides a member for the JTG to review STSs as applicable to their cognizance
- 7.3 Unit 2 Superintendent
- serves as JTG chairman

7.4 Plant Manager

- approves STSs and STS changes
- 7.5 Planning and Scheduling,
 Plant Operating Review Staff,
 Regulatory Licensing, and
 Employee Concerns Program
- each provides as requested lists of activities affecting the preparation of STSs. These items include ECNs, FCRs, Commitments, NPRDS information, Employee Concerns, and other as needed to develop STSs
- 7.6 Restart Test Program (RTP)
 Manager
- provide RTP representation to the JTG
- review STSs and determines readiness for JTG review
- assign RTP test engineersdirect the development of STSs
- report to the Unit 2 Superintendent as needed to maintain the status of the RTP
- 7.7 RTP Procedures Review Group (PRG)
- provides internal review of STSs.

7.8 RPT Test Engineers

- comply with the provisions of this practice

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7.9 <u>JTG Secretary/RTP Administrative</u> Assistant

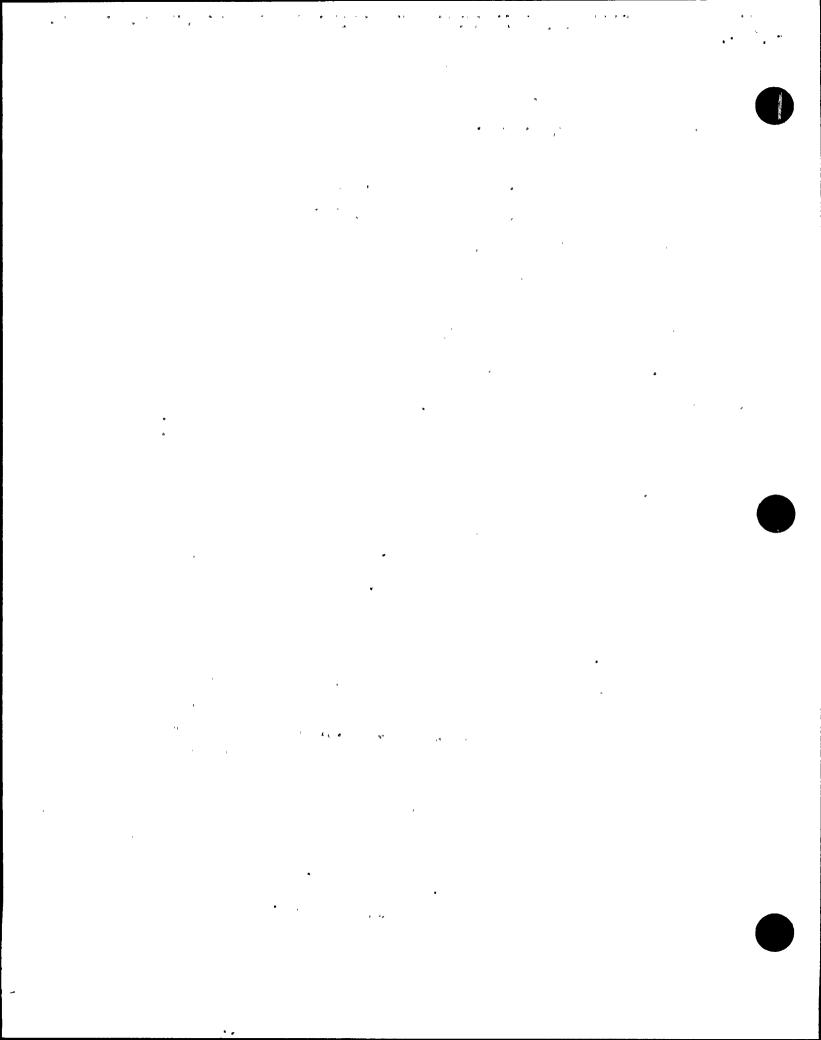
- record and maintain JTG meeting minutes
- maintain a copy of the original STS and provide the "official copy" of the STS to the RTP test engineer
- maintains changes and revisions to the original STS

7.10 <u>Technical Support Services</u>

- provides a member for the JTG
- reviews Design Baseline test requirements
- resolves review comments between the Technical Support Group and the DB&VP
- identifies existing procedures which meet Design Baseline test requirements and transmits this recommendation to the RTP Manager for inclusion with the STS

7.11 Plant Operations Review Committee (PORC)

- reviews and approves JTG minutes
- reviews and approves JTG membership
- 7.12 Document Control (DCS)
- maintains RTP Documents after approval



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8.0 ATTACHMENTS/FORMS

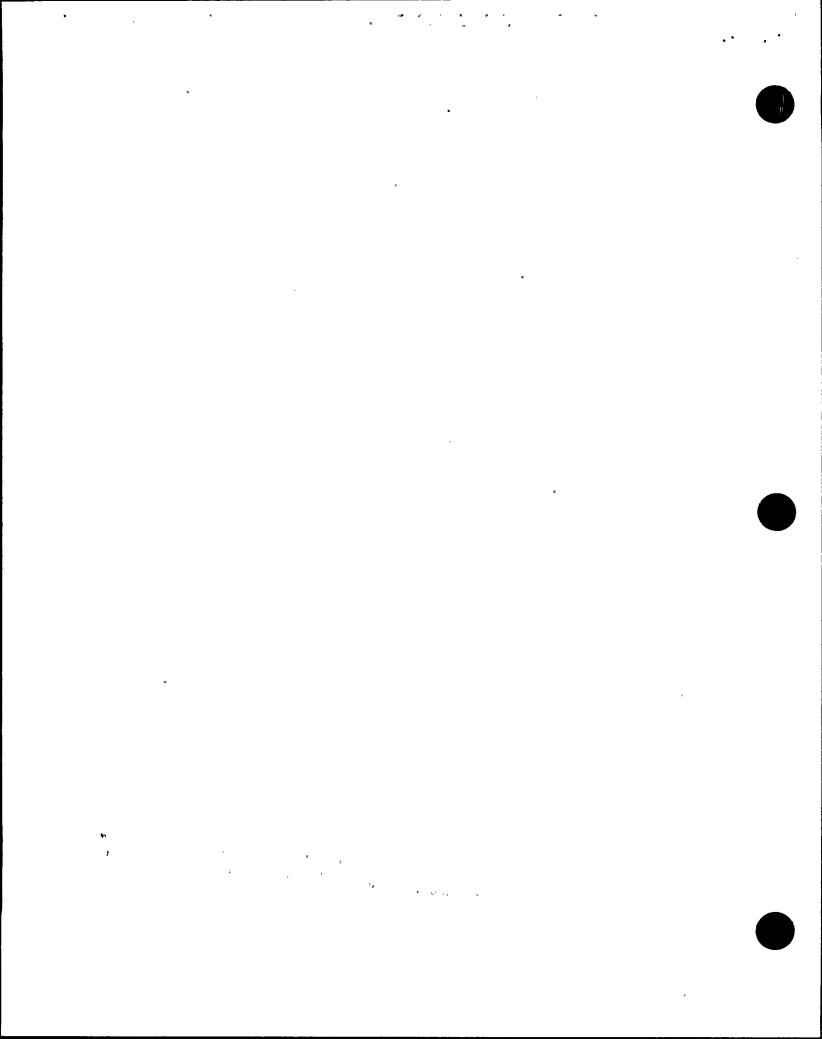
- 8.1 Attachment 1 Restart Test Program System List
- 8.2 Attachment 2 STS Section 5.0, Example Format
- 8.3 Form SDSP-86 System Test Specification Cover Sheet
- 8.4 Form SDSP-87 STS Change Notice
- 8.5 Form SDSP-88 STS Revision Notice Log
- 8.6 Form SDSP-89 Review Transmittal Sheet
- 8.7 Form SDSP-90 Comment Control Form

9.0 DOCUMENTATION/RECORDS

- 9.1 Approved STSs and subsequent changes or revisions are lifetime QA records and shall be maintained as part of the plant historical records.
- 9.2 The following SDSP form retention times and categories are established in accordance with ANSI N45.2.9.

	SDSP Form Number	Retention Time	Category
9.2.1	Form SDSP-86	Lifetime	Lifetime QA Records
9.2.2	Form SDSP-87	Lifetime	Lifetime QA Records
9.2.3	Form SDSP-88	Lifetime	Lifetime QA Records
9.2.4	Form SDSP-89	6.3.9	Non-QA
9.2.5	Form SDSP-90	6.3.9	Non-QA

END OF TEXT



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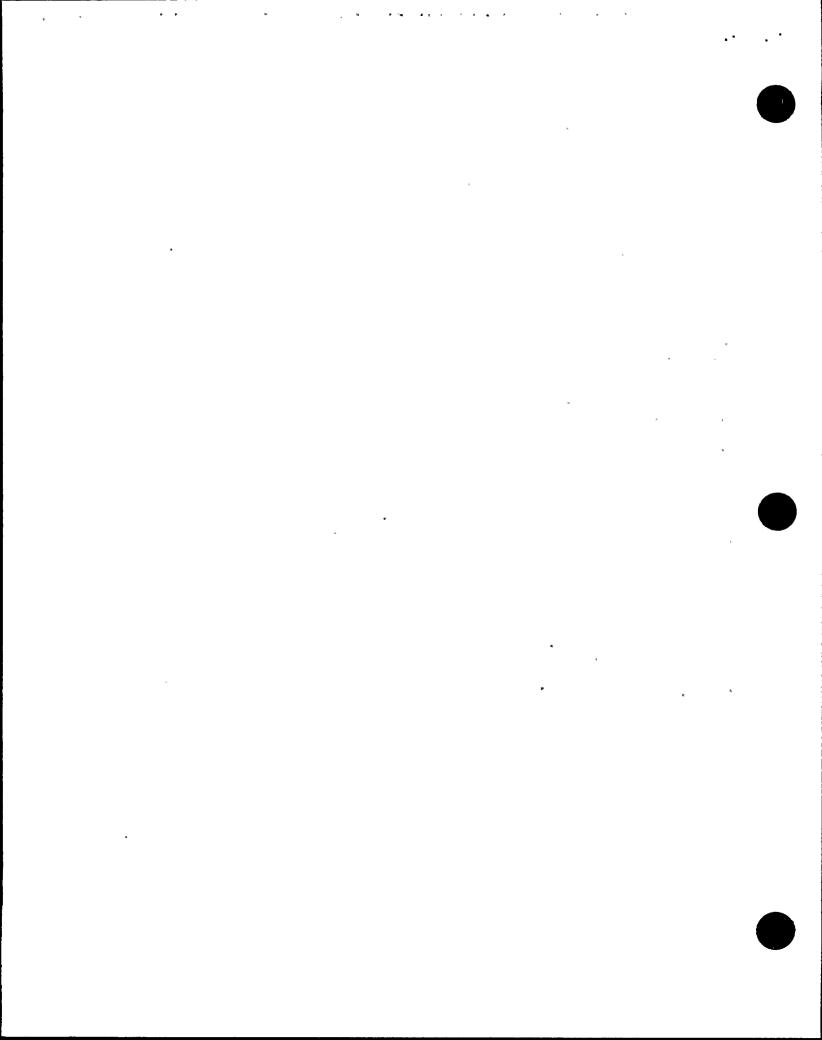
Page 17 SDSP-12.2 ATTACHMENT 1 (Page 1 of 4)

RESTART TEST PROGRAM SYSTEM LIST

SYS.	DESCRIPTION	DBTRD	GROUP	RTP
NO.		ISSUED	NO.	STS NO.
1	MAIN STEAM SYSTEM	Х	1	2-BFN-STS-001
2	CONDENSATE/DEMINERALIZERS	X	1	2-BFN-STS-002
3	FEEDWATER	x	1	2-BFN-STS-003
3 5 6	EXTRACTION STEAM	x	2	2-BFN-STS-002
6	HEATER DRAINS AND VENTS	ļ	3	NONE
8	TURBINE DRAINS	İ	3	NONE
10	BOILER DRAINS AND VENTS	x	2	2-BFN-STS-003
12	AUX BOILER		3	NONE
18	FUEL OIL	X	3 2 3	2-BFN-STS-082
20	CENTRAL LUBE OIL	ł	3	NONE
23	RHR SERVICE WATER	X	1	2-BFN-STS-023
24	RAW COOLING WATER	X	2	2-BFN-STS-024
25	RAW SERVICE WATER	X	2 2	2-BFN-STS-025
26	HIGH PRESSURE FIRE PROTECTION	X X	2	2-BFN-STS-025
27	CONDENSER CIRCULATING WATER	1 x	2 3	2-BFN-STS-027
28	WATER TREATMENT	1	3	NONE
30	DIESEL GENERATOR BLDG. AND REACTOR	i	}	
	BLDG. VENTILATION SYSTEMS	l x	2	2-BFN-STS-030
31	CONTROL BAY HVAC	X	2	2-BFN-STS-031
32	CONTROL AIR	x	2	2-BFN-STS-032
33	SERVICE AIR	х	2	2-BFN-STS-033
34	VACUUM PRIMING		3	NONE
35	GENERATOR COOLING	1	3	NONE
37	GLAND SEAL WATER TREATMENT	ł	3	NONE
39	CO2 STORAGE AND FIRE PROT.	x	2	2-BFN-STS-039
40	BLDG. DRAINS		3	NONE
43	SAMPLING AND WATER QUALITY	x	2	2-BFN-STS-069
44	BUILDING HEATING		3	NONE
46	FEEDWATER CONTROL	x	2	2-BFN-STS-003
47	TURBINE/GEN CONTROL	X	2	2-BFN-STS-047

NOTES: DB&VP TR ISSUED - INDICATES SYSTEMS FOR WHICH THERE IS A TEST REQUIREMENTS DOCUMENT FROM THE DESIGN BASELINE AND VERIFICATION PROGRAM.

RTP STS NO. - EACH TEST SPEC. CAN INCLUDE MORE THAN ONE SYSTEM



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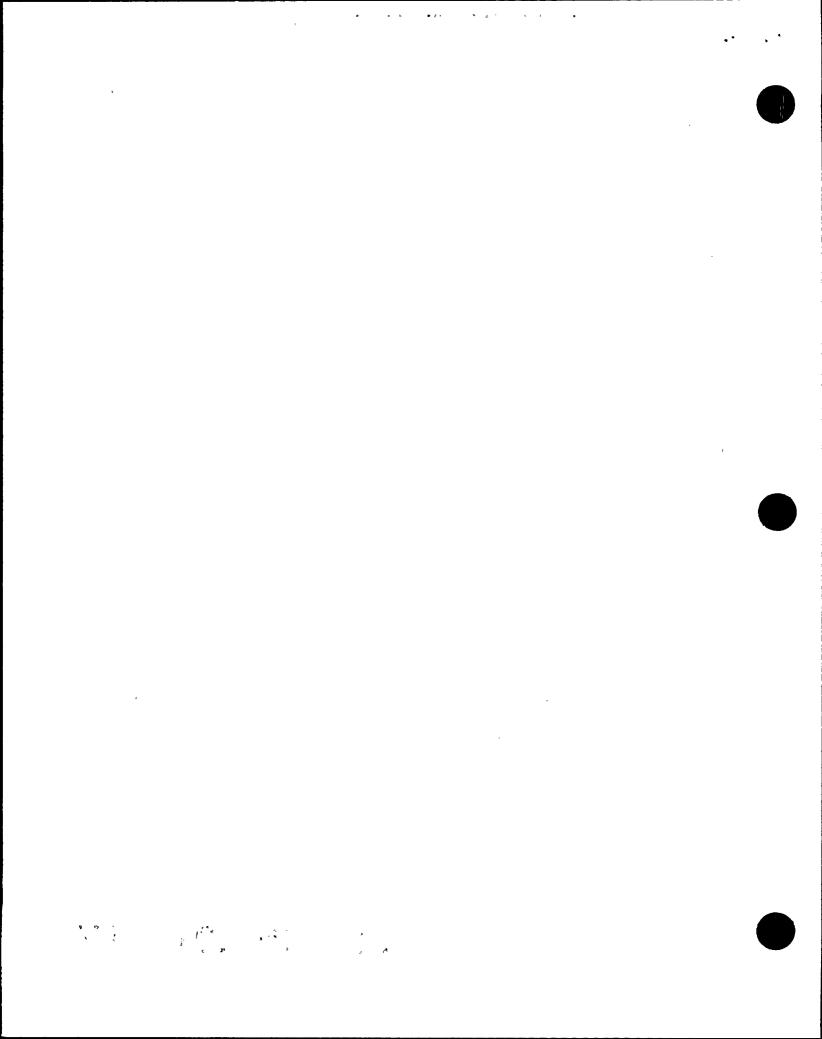
Page 18 SDSP-12.2 ATTACHMENT 1 (Page 2 of 4)

RESTART TEST PROGRAM SYSTEM LIST (Continued)

NO		ISSUED	NO.	1
			1 NO.	STS NO.
l I	SODIUM HYPOCHLORITE INJECTION		3	NONE
51	RAW WATER CHLORINATION	ļ	3	NONE
53	DEMINERALIZER BACKWASH AIR	Ì	3	NONE
55	ANNUN. AND SEQUANTIAL EVENTS RECOR.	j	3	NONE
56	TEMPERATURE MONITORING		3	NONE
57	ASSOC. ELECTRICAL (SEE 200-SERIES)	X	1/2/3	2-BFN-STS-057-X
63	STANDBY LIQUID CONTROL .	x	1	2-BFN-STS-063
64A	PRI CONT/PRI CONT ISOLATION	X	1	2-BFN-STS-064A
64B	REACTOR BUILDING VENTILATION	(x	1	2-BFN-STS-030
64C	SECONDARY CONTAINMENT	x	1	2-BFN-STS-065
65	STANDBY GAS TREATMENT	x	1	2-BFN-STS-065
66	OFFGAS	X	2	2-BFN-STS-065
67	EMERGENCY EQUIP, COOLING WATER	X	1	2-BFN-STS-067
68	REACTOR WATER RECIRCULATION	x	2	2-BFN-STS-068
69	REACTOR WATER CLEANUP	х	2 2	2-BFN-STS-069
70	REACTOR BLDG CLOSED COOLING WATER	x	2	2-BFN-STS-070
71	REACTOR CORE ISOLATION COOLING	х	1	2-BFN-STS-071
73	HIGH PRESSURE COOLANT INJECTION	X	1	2-BFN-STS-073
74	RESIDUAL HEAT REMOVAL	. X	1	2-BFN-STS-074
75	CORE SPRAY	х	1 1	2-BFN-STS-075
76	CONTAINMENT INERTING	x		2-BFN-STS-084
77	RADWASTE	x	2 2 2 2 3	2-BFN-STS-025
78	FUEL POOL COOLING	x	2	2-BFN-STS-069
79	FUEL HANDLING AND STORAGE	х	2	2-BFN-STS-079
80	PRIMARY CONTAINMENT COOLING		3	NONE
82	STANDBY DIESEL GENERATOR	x	1	2-BFN-STS-082
84	CONTAINMENT ATMOS. DILUTION	x	2	2-BFN-STS-084
85	CONTROL ROD DRIVE	х	1	2-BFN-STS-085
86	DIESEL STARTING AIR	x	1	2-BFN-STS-082
90	PROCESS RADIATION MONITORING	х	1	2-BFN-STS-090
92	NEUTRON MONITORING	х	1	2-BFN-STS-092
94	TRAVERSING INCORE MONITOR	x	1	2-BFN-STS-094
96	REACTOR RECIRC FLOW CONTROL	x	ī	2-BFN-STS-068
99	REACTOR PROTECTION	x	1	2-BFN-STS-099
202	4KV UNIT BOARDS	x]	ī	2-BFN-STS-57-5
203	4KV COMMON BOARDS	x	i	2-BFN-STS-57-5
204	4KV UNIT START BD AND BUS 1	-	3	NONE
205	4KV COOLING TOWER SWITCHGEAR	j	3	NONE .

NOTES: DB&VP ISSUED - INDICATES SYSTEMS FOR WHICH THERE IS A TEST REQUIREMENTS DOCUMENT FROM THE DESIGN BASELINE AND VERIFICATION PROGRAM.

RTP STS NO. - EACH TEST SPEC. CAN INCLUDE MORE THAN ONE SYSTEM



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RESTART TEST PROGRAM SYSTEM LIST (Continued)

SYS.	DESCRIPTION	DBTRD	GROUP	RTP
NO.		ISSUED	NO.	STS NO.
210	4KV BUS TIE BOARD	Х	2	2-BFN-STS-057-5
211	4KV SHUTDOWN BOARDS AND BUSES	X	1	2-BFN-STS-57-5
215	480V COMHON BOARDS	1	3	NONE
219	480V DIESEL AUX BOARDS	Х	1	2-BFN-STS-57-4
225	480V UNIT BOARDS		3	NONE
231	480V SHUTDOWN BOARDS	X	1	2-BFN-STS-57-4
236	MAIN TRANSFORMER (500, 20.7KV)	1	3	NONE
237	SERVICE BUILDING MAIN BOARD	-	3	NONE
239	480V LIGHTING BOARDS	1	3	NONE
	480V WATER SUPPLY BOARD	1	3	NONE
241	161KV SWITCHYARD	· ·	3	NONE
242	500KV SWITCHYARD AND GEN. 1, 2, 3	ļ	3	NONE
243	UNIT STA SERV TRANS (20.7, 4.16KV)]	3	NONE
244	COMMUNICATION	X ·	1	2-BFN-STS-244
245	COMMON STA SERV GRANS (161, 4.16KV)		3	NONE
246	COOLING TOWER TRANS (161, 4.16KV)		3	NONE
247	LIGHTING	1	3	NONE
248	250V DC UNIT BATTERIES	Х	1	2-BFN-STS-57-3
248	250V DC SHUTDOWN BATTERIES	x	1	2-BFN-STS-57-7
249	PLANT PREFERRED 120V AC	1	3	NONE
250	PLANT NON-PREFERRED 120V AC		3	NONE
251	48V DC POWER .	Ì	- 3	NONE
252	UNIT PREF 120V AC	x	1	2-BFN-STS-57-2
253	120V AC INSTRU AND CONT POWER	x	1	2-BFN-STS-57-2
254	DIESEL 125V DC	x	1′	2-BFN-STS-57-1
255	DATA LOGGER]	3	NONE
258	OPERATION RECORDER		3	NONE
261	COMPUTER	1 1	3	NONE
262	GENERATOR BUS	x	2	2-BFN-STS-047
265	480V REACTOR BUILDING VENT BDS	X	1	2-BFN-STS-57-4
266	480V CONTROL BAY VENT BDS	x	1	2-BFN-STS-57-4
267	480V TURBINE BUILDING BDS]	3	1
268	480V REACTOR MOV BOARDS) x	1	2-BFN-STS-57-4
269	480V TURBINE MOV BOARDS]	3	ĺ
270	480V CONDENSATE DEMIN BDS		3	

NOTES: DB&VP TR ISSUED - INDICATES SYSTEMS FOR WHICH THERE IS A TEST REQUIREMENTS DOCUMENT FROM THE DESIGN BASELINE AND VERIFICATION PROGRAM.

RTP STS NO. - EACH TEST SPEC. CAN INCLUDE MORE THAN ONE SYSTEM

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RESTART TEST PROGRAM SYSTEM LIST (Continued)

SYS.	DESCRIPTION	DBTRD	GROUP	RTP
NO.		ISSUED	NO.	STS NO.
271	480V AUXILIARY BOILER BDS		3	NONE
272	480V WATER AND OIL STORAGE BDS		3	NONE
273	480V RADWASTE BOARDS		3	NONE
276	480V POWER CABINETS		3	NONE
278	240V DIST. CABINETS (500KV SW YD)		(3	NONE
280	BATTERY BOARDS 1, 2, 3, and 4	X	1	2-BFN-STS-57-3
281	250V DC REACTOR MOV BOARDS	x	1	2-BFN-STS-57-3
282	250V DC DISTR. BOARDS	X	1 1	2-BFN-STS-57-3
283	24V DC POWER .		3	NONE
L/L	LOSS OF POWER/LOSS OF COOLANT ACCIDENT TEST		NA	2-BFN-STS-L/L
BUC	BACKUP CONTROL TEST	X	NA	2-BFN-STS-BUC
ICF	INTERGRATED COLD FUNCTIONAL TESTS		NA	2-BFN-STS-ICF
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NOTES: DB&VP TR ISSUED - INDICATES SYSTEMS FOR WHICH THERE IS A TEST REQUIREMENTS DOCUMENT FROM THE DESIGN BASELINE AND VERIFICATION PROGRAM.

RTP STS NO. - EACH TEST SPEC. CAN INCLUDE MORE THAN ONE SYSTEM

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STS Section 5.0 Example Format

This attachment is provided for guidance on the format for the STS. Each section of the STS review and evaluation will be included. If no records or documents were identified for the review process, include a statement that there were no review documents identified. If a description is required include a title of the document and any other amplifying information required to define the scope of the review. If there is a test requirement, identify the specific requirement or specification.

5.0 Test Requirements

5.1 Engineering Change Notice (ECN) Review

Additional testing to confirm no interaction between two or more

	ECN/Work Plan	Test Requirement
5.1.1	POABC - 4567-85 POGNV - 2456-86	Verify minimum 220V DC at Motor terminals during operation

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Page 22 SDSP-12.2 ATTACHMENT 2 (Page 2 of 3)

5.2 <u>Nuclear Plant Reliability Data System (NPRDS) and Maintenance Request</u> (MR) History Review

5.2.1 NPRDS Component Identifier

Failure Description

Test Requirements

2-RLY-085-3A-K8

Rod control relay 3A-K8 failed causing a fuse to blow as indicated by control room annuaciation

Perform RWM and RSCS surveillance testing.

5.2.2

MR History Component Identifier Failure Description

Test Requirements

2-TR-85-07C

Recorder intermittently stops recording.

Perform GE
Model HG
recorder
calibration.

Number each identified item sequentially starting with 5.2.1.

5.3 Employee Concerns, Licensing Commitments and Conditions Adverse to Quality Reviews

Concern, Commitments, or Condition Tracking Number

Description

Test Requirements

5.3.1 NCO-86-0287-003

During performance of perform the required previous SI-4.10.20.B surveillance an unexplained isolation occurred that was not repeated. Investigation has indicated a possible procedural/human error problem that has been resolved with a revised procedure. The performance of this SI is equired to close this commitment.

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Page 23 SDSP-12.2 ATTACHMENT 2 (Page 3 of 3)

5.4 Design Baseline and Verification Program (DB&VP) Test Requirements

Marie San

5.4.1 DB&VP Requirement Identifier

Test Requirement

Attachment A-System 090

Verify the flow through the Off-Gas Post Treatment In-Line Sample System is in accordance with System Calculations

5.5 Vendor Recommendation Review

5.5.1 Vendor Document Identifier

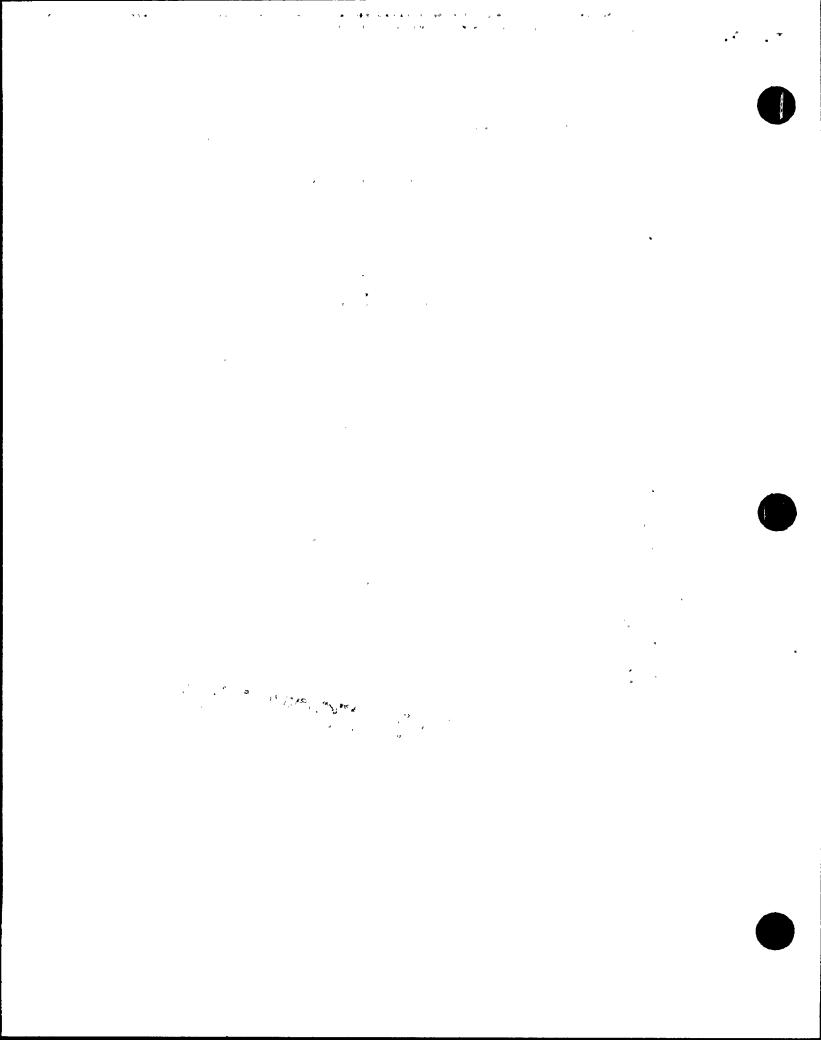
Document Title/ Description

Test Requirement

GR-SIL-234

Off-Gas Pre-treatment Radiation Monitor Calibration efficiency. Requirements. Identifies requirements to redetermine detector efficie:.cy after 6 months of inactivity.

Determine detector



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SAMPLE

Tennessee Valley Authority Browns Ferry Nuclear Plant Site Director Standard Practice SDSP-12.2 Form SDSP-86 (Page 1 of 1)

DEC 28 1987

SYSTEM TEST SPECIFICATION (STS) COVER SHEET

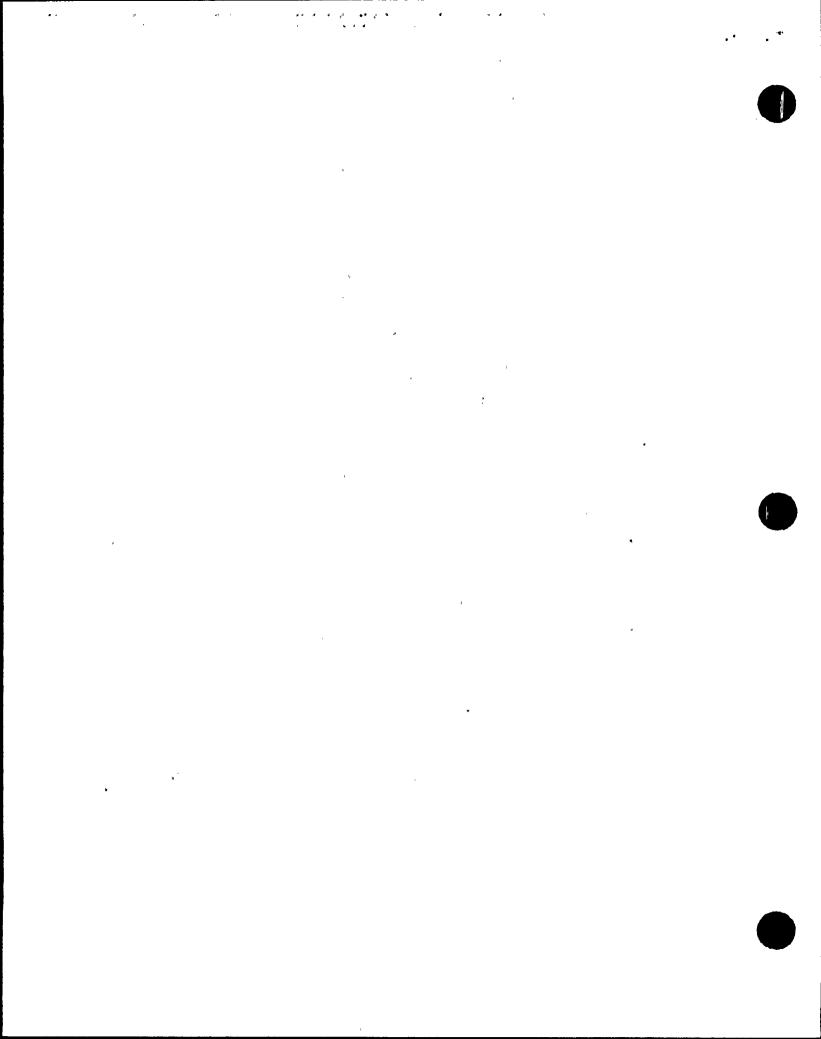
STS Number	Revision	
System Name		
	SIGNATURE	DATE
Prepared By	RTP Test Engineer	
STS Reviewed By	PRG Engineer	
STS Ready for		·
	RTP Hanager	
JTG Review _	JTG Chairman	
STS Approval	- Plant Hanager	

Distribution

Technical Support Services
Division of Nuclear Engineering
Unit Common Haintenance Superintendent (1 MM and I E&IC)
Operations Supervisor
Modifications Supervisor
NRC Resident Office

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SAMPLE

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SDSP-12.2 Form SDSP-87 (Page 1 of 1)

DEC 28 1987

SYSTEM	TEST	SPECIFICATION	CHANGE	NOTICE
313150	1001	SECTIONITION		1401100

sts change number	STS N	MBER	
System name	· · · · · · · · · · · · · · · · · · ·	REVISION	
IS CHANGE TO B	BE INCORPORATED AS A STS RE	VISION (Y/N)	 -
	NAME	DATE	•••
PREPARED	ву		
REVIEWED	RTP Test Engineer		-
VEA154CD	PKG Engineer		1
DESCR	TIPTION OF CHANGE AND AFFEC	TED PAGES OF STS	
	•		
	L	•	
		*	
REASO	N FOR CHANGE		
STS Change Notice Ready for JTG			
Review:	RTP Hanager	Date	
eme Davisus			
JTG Review:			_
	Chairman	Date	
Change Approved:	Pleat Manage		
	Plant Hanager	Date	

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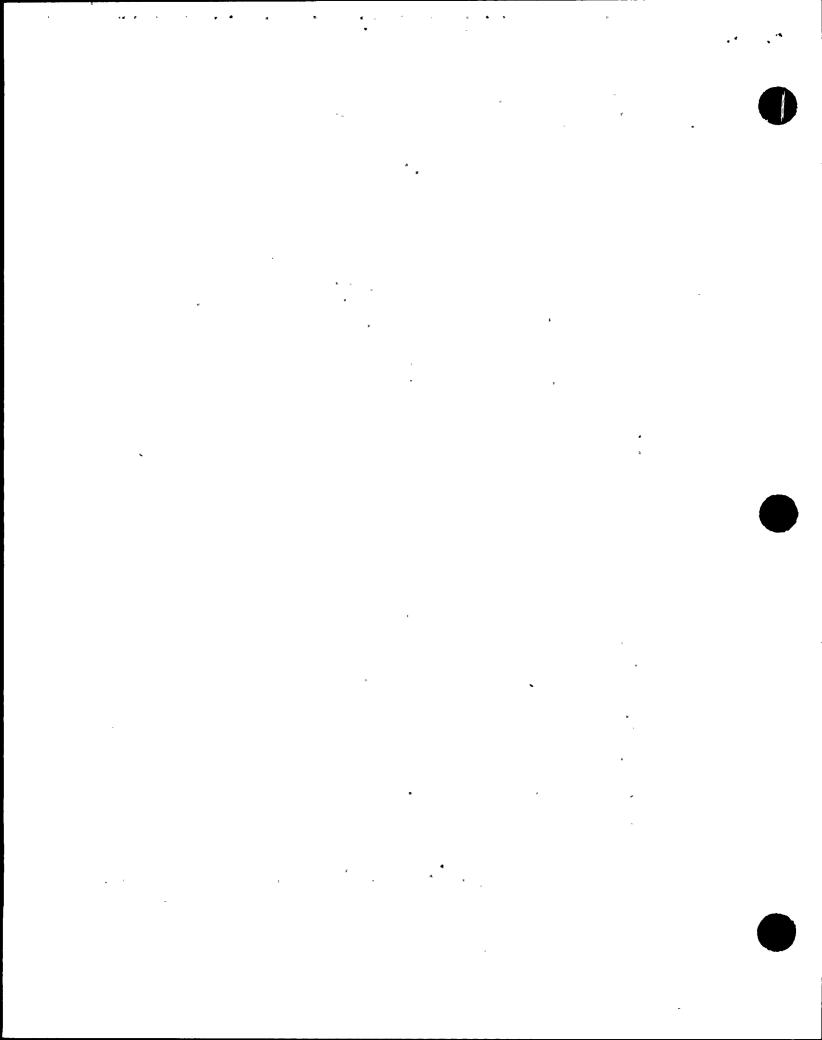
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SDSP-12.2 Form SDSP-38 (Page 1 of 1)

SYSTEM TEST SPECIFICATION REVISION NOTICE LOG

Revision		•			
ANGE NOTICE NO.	REVISION TO	STS (NA/IF N	T APPLICABLE)	DATE	APPROVAL DA
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SAMPLE

Tennessee Valley Authority Browns Ferry Nuclear Plant Site Director Standard Practice SDSP-12.2 Form SDSP-89 (Page 1 of 1)

DEC 28 1987

BROWNS FERRY NUCLEAR PLANT Review Transmittal Sheet

Instruction No.	Title:
Revision No.	
	iew deadline date indicated. Attach reviewer should sign the Comment Control .
Reviewing Section (Joint Test Group	Hembers) Review Deadline
Operations (Unit 2)	Date Transmitted
Quality Assurance	Date
Technical Support	Date
Division of Nuclear Engineering	Date
Haintenance (Unit 2)	Date
Unit 2 Superintendent (Distributed £ JTG Chairman	for Information Only)
Division of Nuclear Construction (Modifications)	Date
NSSS Vendor	Date
- With Comments	
- Without Comments	,
	NOTE

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The Responsible Section Reviewer will sign or initial and date the Review Transmittal Sheet and check the appropriate box when returning his/her comments.

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SAMPLE

Tennessee Valley Authority Browns Ferry Nuclear Plant Site Director Standard Practice SDSP-12.2 Form SDSP-90 (Page 1 of 2)

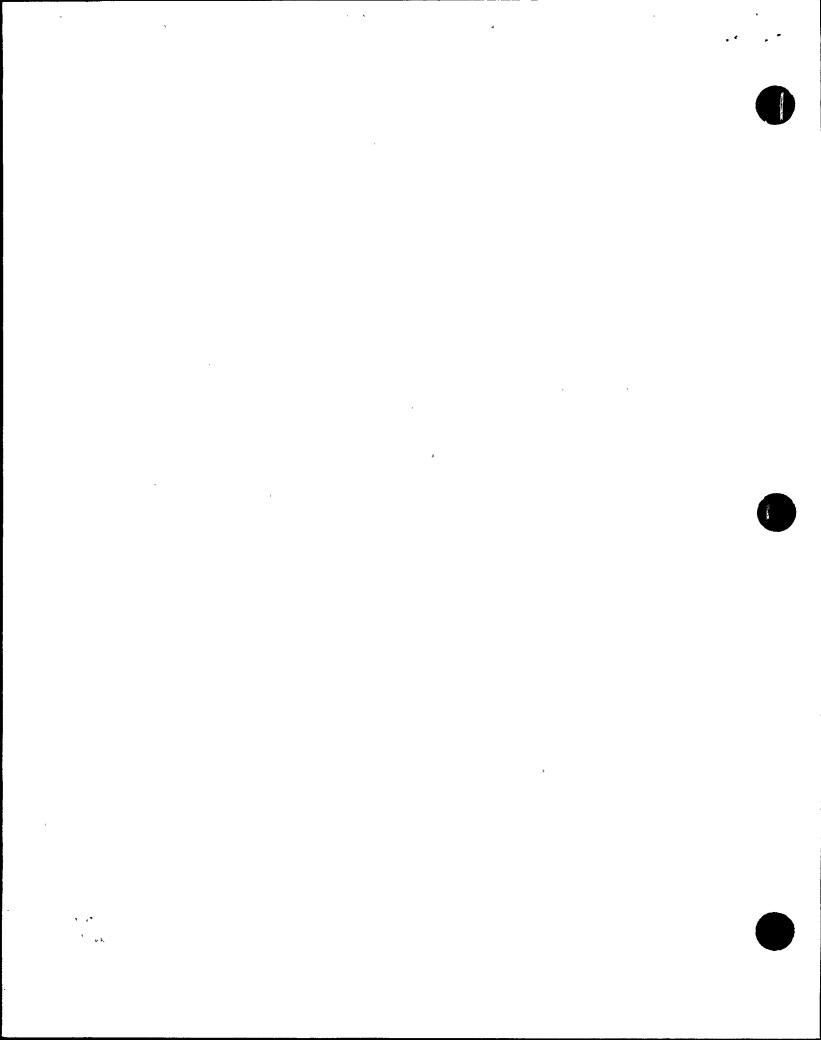
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COMMENT CONTROL FORM

PROCEDURE TITLE		
PROCEDURE NUMBER	REVISION	_,
RTP ENGINEER	Reviewed By	Date

NUM	REF_SECT	CONHENT	RESOLUTION
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Tennessee Valley Authority Browns Ferry Nuclear Plant Site Director Standard Practice

PROCEDURE TITLE/NUMBER

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COMMENT CONTROL FORM (Continued)

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