

Georgia Power Company  
333 Piedmont Avenue  
Atlanta, Georgia 30308  
Telephone 404 526-6526

Mailing Address:  
Post Office Box 4545  
Atlanta, Georgia 30302

L. T. Gucwa  
Manager Nuclear Engineering  
and Chief Nuclear Engineer



the southern electric system

NED-85-579  
2017N

September 9, 1985

Director of Nuclear Reactor Regulation  
Attention: Mr. John F. Stolz, Chief  
Operating Reactors Branch No. 4  
Division of Licensing  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

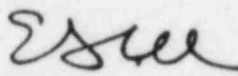
NRC DOCKETS 50-321, 50-366  
OPERATING LICENSES DPR-57, NPF-5  
EDWIN I. HATCH NUCLEAR PLANT UNITS 1, 2  
RESPONSE TO REQUEST FOR INFORMATION REGARDING  
IMPLEMENTATION OF NEW EMERGENCY OPERATING PROCEDURES

Gentlemen:

Georgia Power Company (GPC) hereby submits our response to comments contained in your letter and Safety Evaluation Report (SER) dated June 5, 1985 regarding implementation of new Emergency Operating Procedures (EOPs). Also attached is Revision 1 to the Procedures Generation Package (PGP), which has been issued to address recent plant design changes and comments provided in the subject SER. The Plant-Specific Technical Guideline (P-STG) is currently being revised. However, none of the P-STG revisions being made specifically relate to the SER comments.

Please contact this office if you have any further questions or comments.

Very truly yours,

  
for L. T. Gucwa

A09140

PLS/mb  
Attachment

xc: Mr. J. T. Beckham, Jr.  
Mr. H. C. Nix, Jr.  
Dr. J. N. Grace (NRC-Region II)  
Senior Resident Inspector

ADD. IE/DPER/EPB 2C45

IE/DPER/IRB 1C4

NRR/DSI/AEB 1C4

8509170216 850909  
PDR ADOCK 05000321  
F PDR

ATTACHMENT 1  
TO LETTER NED-85-579

RESPONSES TO SER ITEMS  
REGARDING PLANT HATCH EMERGENCY OPERATING  
PROCEDURE IMPLEMENTATION

GEORGIA POWER COMPANY

SEPTEMBER 9, 1985

## A. PLANT SPECIFIC TECHNICAL GUIDELINES (P-STGs)

### SER ITEM A.1:

Deviations from and additions to the generic guidelines that are of safety significance must be identified in the P-STG. In addition, analyses or other technical justification supporting these deviations and additions must be provided for both Units 1 and 2.

### GPC RESPONSE:

The Plant-Specific Technical Guideline (P-STG) does not include any significant additions to the generic guidelines. The only deviations from the generic guidelines are deletion of plant features referenced in the Emergency Procedure Guidelines (EPGs) that do not exist in the plant (e.g., Mark II and Mark III containment, isolation condenser and high pressure core spray), and substitution of Hatch-specific parameters calculated in accordance with instructions provided with the BWR Owners Group EPGs. All of the deletions are in accordance with the instructions of the NRC-approved EPGs, and none of the deletions are considered to be of safety significance. Accordingly, no supplemental analysis or technical justification supporting the deviations is appropriate.

### SER ITEM A.2:

The GPG should discuss how the additions and deviations are to be verified/validated.

### GPC RESPONSE:

Subsection 2.12 of the EOP implementation plan states that the verification process will verify that the "EOPs are technically correct and accurately reflect the technical guidelines." Verification was performed independently by the plant STA staff. The plant QA department also reviewed the P-STG and determined that the P-STGs have been prepared by a program that is in accordance with the requirements of NUREG-0899.

As stated in the response to SER Item A.1, we have made no deviations of safety significance or that are counter to the instructions of the generic guidelines or the guidance of NUREG-0899. A documented review has been performed to verify that conversion from EPG to P-STG was technically correct, and that controls and instrumentation called for in the EOPs exist, and that verbatim nomenclature has been used.

The intent of validation of the EOPs is to ensure that they are usable, understandable, compatible with expected crew composition, and that appropriate guidance is provided to mitigate the effects of transients

and accidents. Based on this definition, which is widely accepted in the industry, validation is appropriate only for the finished procedure derived from the P-STG, but not directly applicable to a technical bases document such as the P-STG. Notwithstanding the preceding, deficiencies identified by the validation program may require changes to the P-STG for correction.

The " verification and validation (V&V) sections (3.6 and 3.7, respectively) of the implementation plan have been expanded to clarify the definition and intent of the V&V program as described above. Also see the responses to the SER Section C on verification and validation.

SER ITEM A.3:

- a. GPC should explicitly identify the plant-specific information and control needs, which are necessary for preparing EOPs and determining the adequacy of existing instrumentation and controls.
- b. GPC must describe the process used to identify plant-specific parameters and other plant-specific information and control capability needs and must describe how the characteristics of needed instruments and controls will be determined.
- c. For each instrument and control used to implement the EOPs, there should be an auditable record of how the needed characteristics of the instrument and controls were determined. These needed characteristics should be derived from the information and control needs identified in NRC-approved EPGs and from analysis of plant-specific information.

GPC RESPONSES:

- a. Information and control needs will be evaluated as part of the Detailed Control Room Design Review (DCRDR) described in the DCRDR program plan transmitted to the NRC by letter NED-84-556, dated October 23, 1984. Information and control needs will be derived from the generic EPGs. The control room equipment will then be reviewed to identify any discrepancies. The discrepancies will then be evaluated and resolved as described in the DCRDR program plan.
- b. Plant specific parameters and plant specific information and control needs for emergency operations will be derived from the EPGs as part of the DCRDR program. Per the instructions of the NRC-approved EPGs, existing plant instrumentation and controls (I&C) with verbatim nomenclature are used in the EOPs. The EOP implementation plan does not include a program to evaluate instrumentation and control needs and characteristics. Rather, it is the DCRDR program that evaluates plant capability in accordance with NUREG 0737, Supplement 1 (Generic Letter 82-33). This is

intended to be an integrated process per the requirements of the generic letter. The EOP implementation plan, therefore, should not be reviewed in isolation, but rather as part of an integrated process to upgrade plant emergency response capability as described in the GPC response to the referenced generic letter. The PGP implementation plan (pages 17 of 36 through 21 of 36) has been revised to clarify this point and to reference the DCRDR program plan.

- c. Item A.3.c is also addressed as part of the DCRDR program per the instruction of the NRC. There will be an auditable record of how the needed characteristics of the instrument and controls were determined. Details of how this is accomplished are provided in the DCRDR program plan. The EOP implementation plan has been revised to reference the appropriate sections of the DCRDR program plan.

## B. PLANT SPECIFIC WRITER'S GUIDE

### SER ITEM B.1:

The writer's guide should be revised to include all the necessary information and guidance for translating the P-STGs into EOPs (e.g., what actions steps identified in the P-STG will be included in the flow charts and which ones will be included in the end-path-manual).

### GPC RESPONSE:

Actions needed to bring the plant to a known stable condition, and near-term actions needed to protect plant equipment are included in the flow charts. Instructions for long-term plant recovery are in the end-path-manual. Subsections 8.1.6.2 and 8.1.6.3 of the writer's guide have been expanded to provide criteria for placement of action steps in the flow charts and end-path-manuals. Detailed instructions for translating the P-STG into an EOP have been added to the writer's guide as Section 9.

### SER ITEM B.2:

The following items of concern related to flow charts were identified:

- a. The writer's guide should be revised to clarify how the information in the cover procedures can be available to the operator early in an emergency.
- b. Section 8.2, which is the section that addresses flow charts, should be expanded to include the following:

1. If written material is to be in capital letters, as shown in the example on page 63, then instructions to this effect should be provided in Section 8.2.
2. If cautions are to be highlighted with asterisks, as shown in the example on page 63, then instructions to this effect should be provided in Section 8.2.
- c. To ensure that the EOPs are easily accessible in an emergency, the accessibility and availability of the flow charts should be addressed in the writer's guide.
- d. To ensure the legibility of reduced copies of the flow charts, the minimum size for symbols, lines, and type should be specified in the writer's guide.
- e. Several reproduction methods for flow charts are discussed in Subsection 8.2.19, on page 22 of 70. This subsection should be revised to specify that any flow charts intended for use by the operators in an emergency must be of the same quality as a legible original. The same color coding, as specified in Subsection 8.2.21 on page 22 of 70, must be preserved.

#### GPC RESPONSES:

- a. Information contained in the cover procedures is background information which is not referenced during the initial stages of an emergency. Cautions and notes needed while the flow charts are in use are placed on the flow chart. The cover procedures are reviewed during training and may be referenced following an event once the plant condition is stabilized and the operators have exited the flow chart. Subsection 8.1.6.1 has been expanded to clarify the intended use for the cover procedure.
- b.1. Written material on the flow charts is all capital letters to enhance legibility of the reduced size print. The writer's guide, Section 8.2.5, has been revised to clarify this point.
- b.2. Asterisks will not be used for highlighting in the Hatch EOPs. The writer's guide has been revised to delete the referenced example.
- c. The implementation plan, Section 3.14, has been revised to specify the intended location for storage of the flow charts and end-path-manuals. Accessibility and availability of the EOPs will be evaluated as part of the DCRDR, and any feedback will be incorporated into the EOP implementation plan.
- d. Subsection 8.2.20 of the writer's guide has been revised to address requirements for copies of the flow charts. A specification for symbol size, line width, and type has been added to the writer's guide. See pages 76 of 84 through 78 of 84.

- e. Only originals of the flow charts will be provided for use by the operators in an emergency. Consistent quality, including color, line width, size, shape of symbols, etc., is assured by a detailed specification, and by the quality assurance program of the vendor providing computer aided drafting services for the flow charts. The writer's guide has been revised to clarify requirements for originals and copies of the flow charts. See Subsections 8.2.19 through 8.2.21.

SER ITEM B.3:

The writer's guide should address the formatting for the following types of action steps for both the flow charts and end-path-manuals:

- a. Steps used to verify whether the objective of a task or sequence of actions has been achieved.
- b. Steps which are repeatedly performed.
- c. Steps for which a number of alternative actions are equally acceptable.
- d. Steps performed concurrently with other steps.

GPC RESPONSE:

Subsections 8.2.7 and 8.2.8 (flow charts) and Subsection 8.3.7 (end-path-manuals) were written to specify formatting of action steps. These subsections have been revised as needed to address SER Items B.3.a through B.3.d, using the guidance of NUREG-0899, Section 5.7.

SER ITEM B.4:

The manner in which the text is organized and divided should be evident through the use of headings and a numbering system. Several sections of the end-path-manuals are described in Subsection 8.1.6.3, on page 13 of 70. However, the following additional information should be provided:

- a. The intended sequencing of the sections listed in Subsection 8.1.6.3 should be stated and should include a description of the content and format of headings and an example.
- b. A method to permit rapid access to the various sections should be specified.

GPC RESPONSE:

- a. The requested revision has been made to the writer's guide. See Subsection 8.1.6.3.6.

- b. A grid system, described in Subsection 8.2.18, is used to permit rapid reference to sections of the flow charts. A system of tabs and section titles, described in Subsection 8.1.6.3.7, is incorporated into the end-path-manuals. The applicable sections of the writer's guide have been revised to provide additional detail on methods employed to provide convenient and rapid access to sections of the EOPs.

SER ITEM B.5:

Subsection 8.3.10.8, on page 56 of 70, states that reverse page printing may be used to keep certain curves associated with the procedural text in the same area of view. This subsection should be revised to include guidance on the location of curves and tables that will not be placed on the reverse page.

GPC RESPONSE:

The referenced subsection has been revised to specify that curves and tables not tied to a specific section in the body of the procedure will be placed at the end of that procedure as an attachment.

SER ITEM B.6:

Since copies of the end-path-manuals should be complete (contain all of the information from the original) and legible, the criteria regarding completeness and legibility of the reproduced copies should be addressed in the writer's guide.

GPC RESPONSE:

Subsection 8.3.10.9 has been added to the writer's guide to specify requirements for copies of the end-path-manual.

SER ITEM B.7:

The following errors or inconsistencies were identified:

- a. The verification step number 3.0, in Attachment 7, directs the operators to verify that all control rods are fully inserted, whereas the contingency step specifies an action only if two or more rods are not fully inserted. No guidance is given for the situation in which only one control rod is not fully inserted. This discrepancy should be corrected.
- b. The place-keeping aids that are specified in Subsection 8.3.6.3, on page 30 of 70, are not included in the example in Attachment 7. This discrepancy should be corrected.

- c. The logic terms that are used in the flow chart example in Attachment 4 and the example in Subsection 8.2.12, on page 20 of 70, are not underlined for emphasis as specified in Subsection 8.3.7.4.1, on page 45 of 70. The examples should be corrected.
- d. The guidance on when to list conditions or objects of action words differs between Subsection 8.3.6.9.4, on page 35 of 70, and 8.3.7.4.4, on page 45 of 70. This difference should be corrected.
- e. The "GO TO PATH 3" action step at the bottom right of path 1 (Attachment 4) should be a PATH TO PATH arrow.
- f. The entry point, "ANY SCRAM," into the Flow Path 1 (Attachment 4) at the bottom right appears to be in error and should be removed.
- g. The example Caution in Attachment 7 is not consistent with the guidance provided for Cautions in Subsection 8.3.6.5.2, and the information in the example should be a Note not a Caution. These errors should be corrected.

GPC RESPONSE:

- a&b. Attachment 7, which contained the errors noted, has been deleted from the writer's guide. Attachment 7 provided guidance for optional dual-column procedure format, which will not be used.
- c. It was intended that logic terms be underlined only in the end-path-manuals. For improved legibility with the smaller print, underlining is not used in the flow charts. The writer's guide has been revised to clarify requirements for underlining. See Subsection 8.3.7.4.1.
- d. The noted discrepancy has been corrected. See the referenced sections in the revised writer's guide.
- e&f. The examples noted are considered correct as written. The writer's guide, Attachment 5, has been revised to define the "Scram Entry" symbol.
- g. The offending section has been deleted from the writer's guide for the reason noted in the response to SER Item B.7.a&b.

SER ITEM B.8:

For consistency and clarity:

- a. The sample list of acceptable verbs and definitions (Attachment 8) should be finalized to include all acceptable terms.
- b. The list, from (a) above, should be expanded to include words to avoid (e.g., frequently, quickly, slowly).

- c. Abbreviations, symbols, and acronyms are discussed in Subsection 8.3.6.12, on page 38 and 39 of 70. To ensure that abbreviations, symbols, and acronyms are recognizable by the operators, an acceptable list of these items should be included in the writer's guide.
- d. Two types of page format, for the end-path-manual, are discussed in Subsection 8.3.6.2, on page 29 of 70. However, a single format should be specified so multiple writers will produce consistent procedures.
- e. Encouraging variations in the writer's guide can lead to procedures that are inconsistent and may be confusing to the operators, therefore Section 3.6, on page 57 of 70, should be deleted.
- f. Unit identification is specified for the flow charts in Section 8.2.3, on page 17 of 70. Similar guidance should be specified for the end-path-manuals.

GPC RESPONSE:

- a. The sample list of verbs is intended to include only frequently used verbs. A list of all acceptable verbs would be large and would be overly restrictive if certain verbs were omitted due to oversight. Acceptable word usage and style is appropriately handled by Subsection 8.3.6.9 of the writer's guide.
- b. A guide on style and word usage, Subsection 8.3.6.9, is included in the writer's guide. Subsection 8.3.6.9.7 has been expanded to provide more detail on words to avoid in the EOPs.
- c. A list of abbreviations, symbols, and acronyms is contained in the P-STG. The writer's guide, Subsection 8.3.6.12.1, has been revised to include a reference to that list.
- d. As noted previously, optional use of the dual-column format has been discontinued. Attachment 7, which provided criteria for dual-column formats, has been deleted from the writer's guide.
- e. We agree with the recommendation; the offending statement has been revised.
- f. Consistent with a recently implemented system for numbering Hatch procedures, the unit number is designated in the last digit of the procedure number. Numeral zero (0) is used to designate that the procedure applies to both units. A reference to the unit designation in the numbering system has been added to the writer's guide in Attachment 3.

SER ITEM B.9:

The numbering of instructional steps is discussed in Subsection 8.3.6.3, on page 30 of 70. This subsection should be revised to address the following items:

- a. Substep numbering down to the level of 1.1.1.1.1 may be greater than can adequately handled (sic) in the dual column format. Consideration should be given to limiting the substeps to the 1.1.1 level.
- b. The step numbering in Attachment 7 uses the format 1.a, for substeps, rather than 1.1 format specified in Subsection 8.3.6.3. The example should be changed to be consistent with system specified.
- c. Guidance should be provided, in the text, on the numbering of the contingency steps.

GPC RESPONSE:

- a. Optional use of dual column format specified in Attachment 7 has been deleted from the writer's guide. Substep numbering to the level of 1.1.1.1.1 will be retained in the single column format now specified exclusively.
- b. The error noted in SER Item B.9.b was eliminated when Attachment 7 (dual column format) was deleted from the writer's guide.
- c. Subsection 8.3.6.3 provides requirements for substep numbering, including those in the contingency procedures. Subsection 8.3.2.3.2 describes the numbering system for all end-path-manual procedures, including the contingency procedures.

C. EOP VERIFICATION/VALIDATION

SER ITEM C.1

The Implementation Plan should be revised to describe the specific methods that will be used to verify and validate the EOPs.

GPC RESPONSE:

EOP verification (confirmation that the EOPs are technically correct, correctly implement the generic guidelines, and use verbatim nomenclature), was performed by the Plant Hatch Shift Technical Advisor (STA) staff in accordance with instructions which have now been issued as Plant Procedure 30AC-OPS-006-OS. The procedure implements the

applicable INPO and NRC guidance for EOP verification. The EOP implementation plan has been revised to expand the verification section, and to reference the specific procedure used for verification.

EOP validation (confirmation that the EOPs are usable, understandable, compatible with expected crew composition, and provide appropriate guidance to mitigate the effects of accidents and transients) will be performed in conjunction with the DCRDR program in accordance with the requirements of NUREG-0737, Supplement 1 (Generic Letter 82-33). The EOP implementation plan has been revised to expand the description of the validation program and to reference applicable sections of the DCRDR program plan.

SER ITEM C.2:

The verification/validation program should be expanded to include the criteria for selection of the team and to clearly identify their roles and responsibilities. As a minimum, the team should include technical writers and subject matter experts in addition to the operators and personnel specified.

GPC RESPONSE:

The verification process as defined for EOPs ensures only that the procedures are technically correct and conform to existing plant instrumentation and control equipment. In view of this narrow purpose, a multidisciplinary team is not needed for this task. The STA staff possesses the requisite abilities to fulfill this purpose.

The validation process will be conducted by a multidisciplinary team as part of the DCRDR program described in the DCRDR program plan, dated October 23, 1984.

The EOP implementation plan has been revised to expand the description of the verification/validation process, and to provide appropriate references to the DCRDR program plan. See implementation plan Section 3.6 (verification), and Section 3.7 (validation).

SER ITEM C.3:

In Subsection 3.7, on page 16, GPC states that "multiple-event scenarios" will be used to exercise the EOPs. This section should be expanded to state that multiple (simultaneous and sequential) failures shall be used to validate the EOPs.

GPC RESPONSE:

It was intended that scenarios would be challenging, and would include single events and both simultaneous and sequential multiple events. The requested change has been made in the implementation plan.

SER ITEM C.4:

The validation program should include a description of the criteria that will be used to select the scenarios to be run during the validation process. For those parts of the EOPs that cannot be validated on the simulator, the criteria for selecting additional validation that may be used, such as a control room walkthrough, should be described.

GPC RESPONSE:

Criteria used to develop scenarios are provided in the DCRDR program plan. As noted previously, the EOP implementation plan has been expanded to provide more detail on the V & V process and to provide appropriate references to the DCRDR program plan.

SER ITEM C.5:

The use of the verification/validation process for revisions should be discussed in the Implementation Plan. This should include the criteria to determine when verification/validation is required.

GPC RESPONSE:

Procedure 30AC-OPS-006-OS contains requirements for verification of the EOPs. Procedure 30AC-OPS-007-OS contains the instructions for revising the EOP, including a checklist for determining which sections of the verification plan should be performed. The writer's guide, Subsection 8.2.21, has been revised to reference the requirements for revisions to the EOPs.

SER ITEM C.6:

A description should be provided of the method by which multiple units will be handled in the verification/validation process to account for unit differences, if the differences are significant.

GPC RESPONSE:

Due to differences in equipment numbering and small design differences between the twin units, EOP verification will be performed separately for each Hatch Unit. EOP validation for both Hatch units will be performed primarily on the Hatch Simulator, which is based on the design of Unit 2. Differences between the two units and the simulator that affect the validation program will be evaluated either table-top or in the main control room as appropriate. Because of the close similarity between the twin units, and because of the high degree of fidelity of the simulator, differences are not expected to be significant from the standpoint of EOP validation. See Section 3.7 of the implementation plan for additional detail.

#### D. EOP TRAINING PROGRAM

##### SER ITEM D.1:

The training program description should indicate that all EOPs will be exercised by each operator.

##### GPC RESPONSE:

This was intended. The requested revision has been made (Subsection 3.8.1.2).

##### SER ITEM D.2:

The training program description should state that the objectives of Subsection 3.2 (Crew and Shift Policy Characteristics) of the Implementation Plan will be included in the training program.

##### GPC RESPONSE:

The EOPs and the training program have been developed so that they are compatible with the minimum shift complement required by the Technical Specifications. Section 3.2 has been revised to clarify this point.

##### SER ITEM D.3:

If major changes are made in the EOPs as a result of the training feedback, the training program should include description of how GPC will ensure that the needed retraining will be controlled and performed.

##### GPC RESPONSE:

It is expected that changes to the EOPs will be required as a result of training feedback. The implementation plan, Subsection 3.8.1.2, has been revised to clarify how follow-up training will be conducted.

##### SER ITEM D.4:

GPC indicates, in Subsection 3.8.8 on page 26 of 29, that single and multiple events will be used during simulator training. This should be revised to state that the multiple events will include simultaneous and sequential failures.

##### GPC RESPONSE:

This was intended. The requested revision to the training program description has been made.

ATTACHMENT 2  
TO LETTER NED-85-579

PLANT HATCH UNITS 1 & 2  
EOP PROCEDURES GENERATION  
PACKAGE, REVISION 1

GEORGIA POWER COMPANY  
SEPTEMBER 9, 1985