

U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report No. 50-293/88-11

Docket No. 50-293

License No. DPR-35

Licensee: Boston Edison Company  
800 Boylston Street  
Boston, Massachusetts 02199

Facility Name: Pilgrim Nuclear Power Station

Inspection At: Plymouth, Massachusetts

Inspection Conducted: March 14-18, 1988

Inspectors:

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5/17/88  
date

Inspection Summary: Inspection on March 14-18, 1988 (Report No. 50-293/88-11)

Areas Inspected: Special announced team inspection by 2 regional inspectors, 2 headquarters personnel and 2 contractors of the emergency operating procedures (EOPs) and quality assurance measures. This included a comparison of the Plant Specific Guidelines and BWR Owners Group Emergency Procedure Guidelines (EPGs) with the EOPs; comparison of Pilgrim Writer's Guide with the EOPs; walkthrough of selected EOPs and Satellite Procedures; EOP evaluation using simulator scenarios; qualifications of EOP responsible individuals, review of EOP training program; review of EOP verification and validation, and review of EOP Quality Measures.

Results: No violations or deviations were identified in the inspection. The inspection concluded that the EOPs were implemented in accordance with the Revision 4 of the BWR Owners Group EPGs and the plant's Procedures Generation Program; however, 4 unresolved items were identified. One unresolved item involved a sequence of actions in an EOP different from that specified in the EPG (See Section 4). A second unresolved item concerned the inspectors' inability to evaluate the adequacy of the procedures supporting the EOPs, called satellite procedures, due to the incomplete status of the facility walkthrough (See Section 8). The third unresolved item concerned procedures and training associated with containment venting (See Section 4 and 8). The fourth item concerned the lack of continued involvement of QA in the EOP procedures program (See Section 11).

## DETAILS

### 1. Persons Contacted

#### BECo and BECo Contractors

- \* J. Alexander, Operations Section Manager
- \* H. Balfour, License Training Section Manager
- \* F. Barresi, Nuclear Training Development
- R. Barrett, Operations Department Manager
- \* R. Bird, Senior Vice President, Nuclear
- \* C. Brennon, Senior S&SA Engineer
- \* R. Brune, Human Factors, HPT
- \* M. Davis, Consultant, Engineer, Ciel Consultants Inc.
- J. Fulton, Assistant Vice President Engineering
- \* J. Gerey, Senior S&SA Engineer
- \* R. Grazio, Field Engineering and Regulatory Affairs Manager
- \* R. Hamilton, Compliance Division, Manager
- \* K. Highfill, Station Director
- B. Horsman, Reactor Operator
- \* J. Howard, Vice President, Nuclear Engineering and QA
- \* G. Humes, Reactor Operator
- C. Leonard, Nuclear Operations Supervisor
- \* P. Mastrangelo, Chief Operations Engineer
- J. Mattici, QA Audit Division Manager
- \* W. Olsen, Nuclear Watch Engineer
- T. Phipps, Reactor Operator
- S. Powers, Reactor Operator
- S. Rogers, Executive Consultant OEI
- M. Santiago, Senior Training Specialist
- \* F. Schellinger, Quality Engineering Division Manager
- \* J. Schilder, Senior Consulting Engineer, OEI
- R. Swanson, NED Manager
- K. Taylor, Nuclear Watch Engineer
- \* T. Trepanier, Senior Operations Engineer
- \* E. Ziemianski, Nuclear Training Manager

#### U.S. Nuclear Regulatory Commission

- \* T. Kim, Resident Inspector
- \* D. McDonald, Project Manager, NRR
- \* C. Warren, Senior Resident Inspector

\* denotes those present at the exit meeting held on March 18, 1988. The inspectors also contacted licensed operators, engineers, technicians, and other personnel in the course of the inspection.

### 2. Inspection Objective/Approach

This inspection was performed to determine whether the Pilgrim Emergency Operating Procedures (EOPs) had been prepared in accordance with the current Procedure Generation Package (PGP) and whether the EOPs and associated

satellite procedures had been adequately implemented in the plant. The specific areas inspected include the following:

- Review of the technical qualifications of EOP developers
- Comparison of the EPG, PSTG technical basis with the EOPs
- Comparison of the writer's guide with the EOPs
- Review of the EOP verification and validation
- Walkthrough of selected procedures in the plant
- Review of training on the EOPs
- Exercising Procedures in the simulator
- Review of the EOP quality assurance measures

### 3. Qualifications of Individuals Responsible for EOP Development

A review was conducted to determine if the EOPs were developed and reviewed by a multidiscipline team of technically qualified individuals.

The licensee development team consisted of BECo personnel from the Engineering and Training organization, augmented with consultants from Operations Engineering, Inc. (OEI), Human Performance Technology (HPT), and Ciel Consultants, Inc. OIE, as consultants to the BWR Owners Group on the development of the EPGs, provided engineering expertise in the development of the plant specific technical guidelines (PSTGs) and the validation effort. HPT provided Human Factors consulting and CIE assisted in the verification process. A review of the technical background of the team as well as interviews with the team members determined that the members were well qualified and a multidisciplined team.

The inspector reviewed the Onsite Review Committee meeting minutes #87-136 and determined that the EOPs were reviewed in accordance with Technical Specifications.

### 4. Comparison of Plant Specific Technical Guidelines, BWR Owners Group Emergency Guidelines and EOPs

This review included a comparison of the plant-specific technical guidelines (P-STGs) with Revision 4 of BWR Owners Group Emergency Procedure Guidelines (EPGs) and a comparison of the EOPs with the P-STGs. Plant specific values in the EOPs were also assessed.

#### 4.1 EPG/P-STG Review

No safety-significant deviations were found between Revision 4 of the EPGs and the P-STGs. However, since Revision 4 has not been formally reviewed

by the NRC, the future Safety Evaluation Report on Revision 4 may indicate the need for licensee action on the P-STGs and the EOPs.

#### 4.2 P-STG/EOP Review

All EOPs and those portions of satellite procedures which contained steps based on the P-STGs were compared to the P-STG. The following differences were noted. The licensee's review process had also identified some of these findings as indicated.

##### EOP-1: RPV Control

Several action steps within the RPV Level and Pressure sections of this procedure had not been linked by appropriate marking to the appropriate note. The licensee stated that this concern had been previously identified and was under review.

##### EOP-2: Failure to Scram

A decision step (presented in a box) within the RPV Level section of this procedure regarding reactor power level did not provide direction for the condition of power level not being able to be determined. Such direction is provided in an "override" statement which pertains to the next step. The licensee stated that this concern had been previously identified and was under review.

Inconsistencies were noted in procedure branching. The licensee stated that those inconsistencies had been identified and were under review.

##### EOP-3: Primary Containment Control

Primary containment venting was allowed by procedure after torus pressure exceeds 11 psig but before reaching the Primary Containment Pressure Limit (PCPL; 48 psig) irrespective of resultant reactivity release rate. Procedure 5.4.6 stated that venting, irrespective of resultant reactivity release rate, was appropriate only when the primary containment pressure is above the PCPL (or when drywell or torus hydrogen concentration was above 6%). The licensee stated that they will revise the procedures to remove the inconsistency and instruct operators to vent before reaching the PCPL.

PSTG steps PC/H-2.1 (suppression chamber spray), 2.2 (torus or drywell vent), 2.3 (purge), and 2.4 (drywell spray) were reordered in the EOP in the order of: 2.2, 2.3, 2.1, 2.4. The licensee had not previously identified this potential safety-significant deviation. Either analysis of the acceptability of EOP sequence or procedure revision to match the PSTGs is required. This is an unresolved item (50-293/88-11-01).

#### 4.3 Satellite Procedures Review

##### 5.3.23: Alternate Rod Insertion

An instruction regarding reset of alternate rod insertion was missing from this procedure. The licensee stated that this omission had been previously noted and is under review.

##### 5.4.6: Post Accident Containment Control (Venting)

The procedure directed using both a small vent path (1 or 2 inch valves) and a large path (through 8 inch valves) for containment venting. In some scenarios it may not be necessary to open both sets of valves if after opening only the 2 inch or the 1 inch valves the the containment pressure is controlled appropriately. The licensee agreed to revise the procedure or justify not revising it.

A caution contained the words "If at all possible, ... shall ...". This statement did not provide clear direction to the SRO. The licensee agreed to revise the procedure or justify not revising it.

Step 2 of Attachment A of this procedure stated that the EOP is applicable when primary containment pressure reaches 2.5 psig, as opposed to above 2.5 psig. The licensee agreed to revise this statement.

The caution statement about rupture of the ductwork with venting did not include notification of Health Physics. The licensee agreed to revise the procedure or justify not revising it.

Step 2 of Attachment A of this procedure was missing a statement regarding opening the appropriate valves as necessary to perform the step. The licensee agreed to consider revising this statement.

Step 3 of Attachment A of this procedure did not provide clear direction to the operator on the value of primary containment pressure to terminate torus venting. The licensee agreed to revise the procedure or justify not revising it.

The items concerning containment venting will be collectively included as part of unresolved items 50-293/88-11-03. See Section 8 for additional containment venting items.

#### 5. Comparison of EOP Writer's Guide With EOP

All EOPs were reviewed to determine if they followed the guidance provided in the licensee's Writer's Guide. The licensee verbally committed to evaluate the following comments, and to modify the EOPs or the Writer's Guide as appropriate.



### 5.1 Cautions, Notes and Supplemental Information

- Blocks of supplemental information are used in EOPs 01, 02, 06, and 09. The Pilgrim Writer's Guide does not provide guidance as to what information is to be placed within supplemental information blocks.

### 5.2 Logic Terms and Conditional Statements

- a. In EOP-03, Drywell Temperature, second action block, the BEFORE statement does not follow the format stated in the writer's guide. This also occurs in EOP-04.
- b. The term EXCEPT is used several times in EOP-04 and 03. The use of this term places exceptions after an action step. In these statements, the operator is told do something which he or she may go ahead and do before reading the rest of the statement which includes the exceptions.

### 5.3 Action Steps

- a. Throughout the procedures there are action steps which state something "IS REQUIRED." However, this construct, its format and use are not addressed in the writer's guide.
- b. Some of the steps in the sample flowcharts are long and complicated. For example, in EOP-04, "Reset the secondary containment isolation and restart reactor building H & V, defeating high drywell pressure and low RPV water level isolation interlocks if necessary." This step contains many actions. Furthermore, this step does not explain under what conditions it would be necessary to defeat the high drywell pressure and low RPV water level isolation interlocks. Another example of a step that is too long is from EOP-01, "Irrespective of whether adequate core cooling is assured, terminate injection into the RPV from sources external to the primary containment UNTIL primary containment water level and torus pressure can be maintained below the MPCWLL."
- c. In EOP-02, near the end of Reactor Power, there is a BEFORE statement whose action reads, "BORON INJECTION IS REQUIRED." This action statement does not follow the format for BEFORE statements.
- d. In EOP-02, in the next instruction block, the two numbered actions are prefaced with the word "either". The word "either" implies that the operator can perform either step 1 or step 2. However, this may not be the case. This construction is not addressed in the writer's guide.

#### 5.4 Referencing and Branching

- a. Throughout the procedures the phrase "appropriate section of Procedure..." is used to refer the operator to another procedure. More specific directions appear necessary.
- b. The writer's guide specifies a number of methods to refer the operator to other procedures. However, there are reference statements which do not follow any of the methods in the Writer's Guide. For example, in EOP-01 the phrase "enter and concurrently execute Procedure 2.6.1..." is used. In EOP-02 the phrase "Insert control rods using one or more of the methods detailed in Procedure 5.3.2.3..." is used.

#### 5.5 Flow of Information

In EOP-02, path A is difficult to follow and some method is needed to help indicate the direction of flow.

#### 5.6 Miscellaneous

- a. In EOP-03, Torus Water Level, in the first action step, the acronym PASS is used; this acronym is not defined in the Pilgrim Writer's Guide.
- b. In EOP-03, Drywell Temperature, the first six-sided symbol does not contain a comma after the IF or AND statements. Also, in the last two BEFORE symbols a comma is not placed after the before statement.
- c. In EOP-03, Hydrogen and Oxygen Concentrations, when Hydrogen concentrations are referred to the format is inconsistent. The first instance a decimal is used, i.e., 1.0% and in the remainder instances no decimals are used, i.e., 5% and 6%.

#### 5.7 Satellite Procedures

The Attachments to 5.7.3.2 are very difficult to read.

### 6. EOP Verification

The verification program at Pilgrim was reviewed and compared to the EOP Verification Program description submitted in the PGP. The contractor who performed the verification, and cognizant plant personnel, were interviewed.

A variety of documents were reviewed. The documentation included:

- Completed and signed verification forms
- Interim report on discrepancies
- List of open verification items
- Operator comments



The documentation appeared thorough and complete and the licensee's discrepancies were well defined and described.

7. EOP Validation

The validation program at Pilgrim was reviewed and compared to the Validation Program Description submitted in the PGP. To perform this review the contractors (Ciel Inc. and Human Performance Technologies Inc.) who performed the validation were interviewed.

A variety of documents were reviewed. The documentation included:

- Completed and signed validation forms, checklists, and questionnaires
- Resumes of participants
- Scenarios used during the validation process
- Copies of EOPs showing which paths/steps were validated

For each scenario the paths/steps for each EOP used were traced on copies of the EOPs using a color code. At the end of validation this method showed how much of each EOP had been validated both through the simulator exercises and the talkthroughs. An examination of a sample of these EOPs showed that all paths/steps had apparently been validated.

The documentation appeared thorough and complete and the licensee's discrepancies were well defined and described.

8. Walkthrough of Emergency Operating Procedures and Satellite Procedures

Inspectors, with facility licensed operators, walked through portions of the following procedures in the Control Room and in the plant to assess whether the procedures were capable of being performed when required. The procedures walked through included both the EOPs and the satellite procedures.

EOP-02	RPV Control
EOP-03	Primary Containment Control
5.3.26	RPV Injection During Emergencies
5.4.6	Primary Containment Venting and Purging
5.3.23	Alternate Rod Insertion

The inspectors assessed the consistency of terminology between the plant labels and procedures, access to the equipment, clarity of instructions, availability of information to conclude the action should be taken and overall useability of the procedure.

During the walkthrough the inspectors identified several items that needed facility actions to correct. These are detailed in Attachment C and summarized below. The inspectors identified concerns relative to plant labeling (either missing, inadequate or not consistent with procedure nomenclature), the availability/control of jumpers/tools required to perform selected EOP actions, the clarity of procedures to direct operators to a specific location to perform the required task, accessibility of equipment, and completeness of procedure.

A number of the EOP-related items identified by the inspectors had also been identified by the facility review process and actions were being taken to address the observed problems. However, the facility review of the satellite procedures was still in progress even though the procedures were approved and issued, i.e., they had not yet finished their own walkthrough of the satellite procedures. Furthermore, the operations management agreed to assure that the plant labeling was consistent with the EOPs and satellite procedures. Therefore, pending further NRC review following completion of the facility walkthrough of the satellite procedures and the licensee actions to correct the identified deficiencies, this item will remain unresolved (50-293/88-11-02).

One item identified during the walkthrough of the EOPs was an apparent need for additional training on when to initiate and when to terminate venting of the containment in accordance with the intent of the EPGs and the procedures. Items concerning containment venting will be considered an unresolved item (50-293/88-11-03). See section 4 for additional containment venting items.

#### 9. EOP TRAINING

A representative of the Pilgrim Training Center (a lead instructor, heading up the Phase II EOP training) was interviewed to determine if the current EOP training program matched that described in the Training Program Description in the PGP.

A number of training related documents were also reviewed. This documentation included:

- Administrative records
- Student records
- Lists of training objectives
- Lists of performance and cognitive standards
- Exam results
- Exams
- Unit, Course and Modular Guides
- Homework lessons
- Scenarios used during simulator training

All documentation appeared complete and thorough. However, the training program description included in the PGP is no longer applicable. This program (referred to as Phase I) was executed, but had some difficulties which the licensee believed may have contributed to an original unsuccessful validation. As a result, the licensee revamped the training program. The licensee needs to prepare a revised Training Program Description for their current EOP training and submit this description as a part of a revised PGP. The training representative stated that they were preparing a new training program description which would address previously identified weaknesses.

The training program, Phase II (80 hours), was a combination of classroom and simulator training. As of the inspection, about 50% of the operators had been trained in Phase II. Pilgrim plans to have all operators trained by May 1988.

#### 10. EOP Evaluation Using Simulator Scenarios

A shift operating crew in the final stage of operator training on EOPs was observed in the Pilgrim simulator to determine if 1) the operators are familiar with their responsibilities and required actions during an emergency, 2) the EOPs and EOP satellite procedures can be performed by the minimum staff 3) operators do not physically interfere with each other while performing the EOP, and 4) transitions from one procedure to others are appropriately directed by the EOPs.

The shift operating crew consisted of 2 SROs, 3 ROs, an STA and a shift clerk. This crew size is larger than that required by the Pilgrim Technical Specifications, but specified in the administrative procedures. The crew was exposed to three NRC generated evaluation scenarios which required entry into several EOPs (i.e. EOP-1, 2, 3, 4, 6 and 7) and their appropriate satellite procedures (i.e. 2.1.5, 2.1.6, 5.3.21, 5.3.23, 5.3.26, 5.4.6, 5.7.3.2).

Operators did not physically interfere with each other during their conduct of the scenarios, and transitions were appropriately designated. Some procedural usage problems were encountered during the conduct of the scenarios, but these problems were attributed to the level of operating training (i.e., the operators had not completed their EOP training).

The inspector concluded that the EOPs and EOP satellite procedures could be performed by the crew.

#### 11. EOP Quality Assurance Measures

A review was conducted to determine if Quality Assurance Measures are adequate to ensure that high quality EOPs are developed, implemented and maintained.

The QA measures associated with the development of the EOPs were found to be acceptable, based on discussions with the Quality Engineering Division Manager and Senior Quality Engineer. However, it was concluded that a programmatic approach to ensure the continued quality of the EOPs through audits of the maintenance of the EOPs did not exist in the area of auditing of the EOP program.

In subsequent discussions with the Vice President, Nuclear Engineering Division and Quality Assurance management, BECo committed to revise the 1988 Internal Audit Schedule to include an annual audit of the EOP program. This audit will be performed as a Safety System Audit in the fourth quarter of 1988. The proceduralization of continued quality assurance measures is an Unresolved Item (50-293/88-11-04).

12. Exit Interview

An exit meeting was held on March 18, 1988 to discuss the inspection scope and findings as detailed in this report (see paragraph 1.0 for attendees). Written inspection findings were not given to the licensee. The facility did not indicate that proprietary information was utilized during this inspection.

Attachment A

Documents Reviewed

Plant Procedures

Pilgrim Nuclear Power Station Plant Specific Technical Guidelines, Revision 3

Appendix to the Pilgrim Nuclear Power Station Plant Specific Technical Guidelines

Procedure 1.3.4-10 Writers Guide For Emergency Operating Procedures, Revision 2, Dated October 15, 1987

Procedure 1.3.4-13 EOP Verification Program, Revision 1, Dated October 16, 1987

Procedure 1.3.4-14 EOP Validation Program, Revision 0, Dated July 10, 1987

Pilgrim Nuclear Power Station EOP Training Program Summary Description  
Attachment 4 to BECo Letter 87-185

EOPs

EOP-01 RPV Control, Revision 0, Dated November 18, 1987

EOP-02 Failure to Scram, Revision 0, Dated November 18, 1987

EOP-03 Primary Containment Control, Revision 0, Dated November 18, 1987

EOP-04 Secondary Containment Control, Revision 0, Dated November 18, 1987

EOP-05 Radioactivity Release Control, Revision 0, Dated November 18, 1987

EOP-06 RPV Flooding, Revision 0, Dated November 18, 1987

EOP-07 Alternate RPV Depressurization, Revision 0, Dated November 18, 1987

EOP-08 Steam Cooling, Revision 0, Dated November 18, 1987

EOP-09 Primary Containment Flooding, Revision 0, Dated November 18, 1987

EOP Satellite Procedures

Procedure 5.4.6 Primary Containment Venting and Purging Under Emergency Conditions, Revision 17, Dated September 3, 1987

Procedure 5.3.21 Bypassing Selected Interlocks, Revision 4, Dated October 14, 1987

Procedure 5.3.23 Alternate Rod Insertion, Revision 1, Dated December 4, 1987

Procedure 5.3.26 RPV Injection During Emergencies, Revision 0, Dated August 30, 1987

## Attachment B

### Comments with Respect to the Pilgrim Procedures Writer's Guide

Note: These comments were a result of a comparison of the Writer's Guide with guidance given in NUREG-0899.

#### 1. Cautions and Notes

Cautions and notes provide operators with critical and useful information concerning steps or sequences of steps in EOPs. The discussion of cautions and notes in the Writer's Guide lack some specifics.

- (a) Section III.A.13 states that "notes shall be ... placed within the respective flowchart element, located immediately preceding or following the associated text." Notes should be read and comprehended by the operator prior to the step(s) they refer to, not after. Notes should only be placed immediately prior to the step, not following it, as suggested in the guidance.

The phrase "following the associated text." should be deleted.

- (b) Section III.A.12 discusses "supplemental information". However, the writer's guide does not define supplemental information or how it differs from notes. The writer's guide does not tell the writer when to use supplemental information instead of notes or vice versa.
- (c) There is no guidance provided as to the use of capitalization in caution and note statements.
- (d) When cautions and notes contain multiple topics the importance of any one topic is obscured.

#### 2. Logic Statements

Logic statements are used in EOPs to describe a set of conditions or a sequence of actions. Because logic statements can be confusing, it is important to provide explicit guidance for their use.

- (a) Table 1, includes the word EXCEPT. In logic statements using EXCEPT, the conditions follow the actions which may lead operators to perform the actions before reading the conditions. An approach should be used where all conditions are read prior to the actions such as in a Note or Caution (which ever would apply); or word the statement to specify only the actions to be taken and not exceptions. For example, in Example 11 on Page 11 of the Writer's Guide, the "sources" to be used could be specified instead of listing the exceptions.



- (b) Using the logic term THEN at the end of an action to instruct the operator to perform another action in the same step runs actions together which may be overlooked or may be confused with logic statements. For example: "Do A, THEN B, THEN C, THEN D." should not be used. The writers' guide should state that THEN will not be used to run action steps together. Further, the word "then" should not be used other than as a logic term to avoid operator confusion as to its meaning. In the following example, "If A, THEN B and THEN C" the "and" and second "then" should not be used.

### 3. Flow charts

Flow charts can be a valuable means of presenting important information to operators and must be formatted and written efficiently and effectively. The writer's guide states that concurrent flows of steps should be spaced to "achieve a balanced presentation." This is ambiguous guidance. For example, it could mean that a short flowpath containing a few steps should be stretched out to balance out a concurrent long flow containing many steps for appearance sake. As another example, it could mean that certain symbols in concurrent flows should be placed side by side to achieve overall visual balance.

### 4. Emphasis Techniques

The proper use of emphasis techniques makes the procedures easier to understand. The use of uppercase letters is discussed on page 20 of the Writer's Guide, but the use of all caps versus the use of initial caps and lower case is somewhat ambiguous. For example, it is clear that the word START is all caps, and section designators are upper and lower case, because examples are given. But, the writer's guide does not make it clear for each application whether all caps are to be used, or initial caps only.

### 5. Divisions, Headings, Numbering

It is important that a consistent method of section heading and step numbering be used throughout EOPs. The use of overall headings and an alpha-numeric numbering system for each step is usually needed so that operators can keep track of where they are in the procedure and know how to move easily and quickly to other parts of the procedure.

The flow charts have a system of titles and a numbering system to identify procedures and overall headings for flow sequences. However, there is no alpha-numeric numbering system for sections or symbols within the flow chart. This makes it difficult to refer to a section or symbol and an operator may not be able to keep track. For example, if one operator wants to indicate a particular step to another operator there is no easy way to verbally refer to the section or symbol.

6. Tables/Figures/Printed Aids

Figures and tables assist operators to make decisions and to locate information.

- (a) The writer's guide states that the units used on the axes of graphs on page 15 should correspond to those of associated control room instruments, but the same guidance is not given for tables discussed on page 17.
- (b) Because unnecessary information may clutter figures and tables and confuse operators, all figures and tables should contain only information that is needed by operators and is relevant to the text.

7. Location Information for Equipment, Controls, Displays

It is important that the operators know where to find all of the instrumentation and controls that are referenced in the EOPs.

- The writer's guide (on page 29) provides criteria to determine if location information should be put in a step. However, this guidance does not state the basic format for the information statement or provide an example.

8. Formatting

Writers should be given sufficient information in the writer's guide to produce procedures that are consistently formatted.

The writer's guide states that for boldface type a slightly larger type size should be used. This larger type size should be specified. The guide also mentions varying thicknesses of lines to be used in the flow charts. The guide should provide guidance on thickness sizes.

### Attachment C

#### NRC Observations in Walkthrough of EOPs and Satellite Procedures

1. Control Room Indicator TI-9019 did not have a label to indicate it was for drywell temperature. The facility was in process of correcting.
2. Relays in general (and specifically RPWP1) had labels which were masking tape with information written on it. These labels were inadequate. Facility operations management agreed to assure all labels for EOPs/satellite procedures were correct and consistent.
3. Relay Terminals used as jumpering locations in panel C170 were not clearly marked.
4. Procedure 5.4.6 did not direct evacuation of the reactor building prior to initiating containment venting although it did contain a caution that venting may result in rupturing some lines in the reactor building.
6. Procedures have no description or different word description than plant labels. Several examples were noted. A few examples were: EOPs refer to torus temperature whereas plant label refers to bulk torus temperature. 5.3.23 referred to "MO-302-8" with no description. While the plant label has a clear description of this valve. In procedure 5.4.6 the 2" drywell vent valve AO-5043A was referred to in the plant label as 2" drywell vent exhaust valve #2 AO-5043A. (Facility actions are discussed in comment 2 above.)
7. Procedure 5.3.23 required the operator to increase flow using valve FCV-302-6A(B). Actual operator practice was to use controller FC-340-1 to increase system flow without any procedure direction to this controller.
8. At the RPS test channel switches, in one channel the switches were located above the labels and the other channel the switches were located below the labels.
9. A label was missing on the 8" drywell purge exhaust valve #2.
10. In procedure 5.3.26, the location of the spool piece to be inserted is between two valves. The valves are located on two plant elevations (different rooms) and were not within eyesight. The location in the plant is not specified in the procedure. Instruction was not provided in the procedure or locally on how to install the spool piece or the additionally necessary step to connect the local instrumentation.
11. The location of vent valve 3/4 VT-120 was about 20 ft overhead and use of a ladder was required to operate the valve. The facility reportedly evaluated the need to operate this valve and had initiated actions to change the procedure to not use this valve.