

**Florida
Power**
CORPORATION

Crystal River Unit 3
Docket No. 50-302

September 9, 1992
3F0992-06

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

- References:
- A. NRC Letter to FPC (J. Lieberman to P. Beard) dated August 5, 1992 (3N0892-07)
 - B. FPC Response to Notice of Violation dated May 8, 1992 (3F0592-06)
 - C. NRC Minutes of Enforcement Conference dated January 27, 1992 (3N0192-15)

Subject: Enforcement Action 92-002

Dear Sir:

Florida Power Corporation (FPC) has reviewed Reference A and this letter provides our response. Our response begins with a background section explaining our practice in replying to a Notice of Violation (NOV) (including Reference B). The second section responds to the requests for additional information. The status of our self-assessment concludes our response.

BACKGROUND

FPC has established a general practice to respond to comments, observations or requests for additional information contained in NOV cover letters in a manner that clearly separates such information from the 10 CFR 2.201 required response to any cited violations. The reason for this is to focus attention on our actual assessment of root cause and actions taken to correct and prevent recurrence of the non-conforming activity. The other information may be valuable in assessing "lessons-learned" and yet not relevant to the root cause(s).

In the subject case, we conducted an extensive self-assessment of lessons-learned from the event; we had the benefit of NRC Inspection and AEOD reports; and we held numerous discussions with various levels of the NRC staff. All of these

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were valuable and contributed to a number of changes and improvements to corrective actions as well as ongoing activities. However, in accordance with our general practice, we did not include all of this information in our response to the NOV. This is consistent with the cover letter transmitting the NOV to FPC which noted that "... these recommendations (those contained in our self-assessment) transcend the corrective actions for the violations described in the Notice...". The cover letter continued by suggesting two areas of emphasis and requested they be addressed in our response. Our inclusion of the self-assessment report, its then current status, and our commitment to update the Project Manager and Resident Inspector were our response to this request. Therefore, it was our judgement that we had adequately addressed the issues discussed in the cover letter and had appropriately communicated our actions to the NRC staff.

RESPONSE TO REQUESTS FOR ADDITIONAL INFORMATION

- 1) The "Reasons for Violation" and "Corrective Steps" did not address control room command, control, and communication or alarm response procedure adequacy because they were not judged to be the root cause(s) of the event. The event was caused by personnel error with a number of contributing effects. Nevertheless, we have addressed both issues as follows:
 - a. Formal and proper control room command, control, and communications have been, and will continue to be, stressed in training sessions at the simulator. Included in current training sessions (and reflected in procedures) is the requirement for shift supervisor approval prior to bypassing any Engineered Safeguards function. Personal observations by FPC operations and senior management in the simulator and plant control room indicate improvement in this area both before and after the December 8, 1991 event. NRC simulator and plant inspections have not noted any generic problems in this area. In addition, we are providing additional resources to assist the shift supervisor during off-normal conditions.
 - b. With regard to alarm response procedures, we have a program underway to revise these procedures and to better integrate their use into our overall administrative and operational guidance. The regional staff recently conducted an inspection to assess procedural adequacy in general and, to the best of our knowledge, was satisfied with our plans and progress on this effort.
- 2) The "Reasons for the Violation" and "Corrective Steps" did not address our policy on operating the plant in accordance with procedures because we have not identified any misunderstanding by plant personnel of management's position in this area. FPC management, at all levels, expects the plant to be operated and maintained in accordance with approved plant procedures.

The discussion in the "Reasons for the Violation" paragraph of the response to Violation I.A was intended to reflect the fact that there will always be specific situations that rely on operator judgement to some extent. As discussed at the Enforcement Conference (Reference C, Enclosure 3, Item 5, which was Tab 5 of the information provided to the participants), the procedures that were applicable for this situation included OP-20s (Plant Startup), AR-502 (RCS Pressure Low Alarm) AP-580 (Reactor Trip) and AP-380 (ECCS Actuation). As noted in our response to Violation II.A, certain of the procedures warranted improvement; further, AP-380 was not fully implemented. Appropriate changes to the procedures have been made. Also, as noted in our response, our overall administrative instruction (AI-500, Conduct of Operations) has been revised to stress the requirement for completing all follow-up steps in Emergency and Abnormal Procedures. Furthermore, we are nearing completion of an overall upgrade to our Emergency Operating Procedures (EOP). An element in that effort related to that event is the clarity of entry and transition conditions. The revised EOPs will be more effective in providing operational guidance in such situations.

- 3) We did not describe the guidance given to the operators on the basis and instructions for bypassing ESFAS because it had previously been provided (Reference C, Enclosure 3, Item 2 which was Tab 2 of the information provided to the participants at the Enforcement Conference). The actual content of procedure changes made in response to violations or other corrective actions is generally validated by the NRC inspection staff by reviewing the actual controlled documents. We provided the references in our response to facilitate this review. We do not generally provide copies of internal correspondence or actual procedure revisions on the docket since that could be misinterpreted as making them part of our licensing basis.

The current guidance for bypassing Engineered Safeguards (ES) Actuation systems includes conditions which are, and are not, acceptable for bypassing. ES systems will not be initially bypassed during a transient unless specified in a procedure. Subsequent bypassing of ES equipment, due to re-actuation, is also addressed in the guidance. In all cases, the shift supervisor's concurrence is to be obtained prior to bypassing any ES Actuation system.

INTERPRETATION OF REPORTING REQUIREMENTS

There is no disagreement on whether this event was reportable. Clearly it was reportable under 10 CFR 50.72 (a) and/or (b). The requirements and related guidance (NUREG-1022) require that all applicable reporting requirements be identified during such reports. In this case, the actual report noted that the event was reportable as a declaration of an Unusual Event and several non-emergency events (ECCS discharge to the RCS, RPS Actuation and ESF actuation).

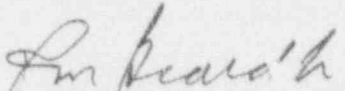
We attempted to focus the discussion on the fact that our reporting was timely and appropriate once the event was recognized as being reportable. We agree that such recognition was not timely. Thus, our corrective action focussed on the need to more promptly classify such events and take all the associated actions (including reporting). Emergency Plan training and procedures have been reviewed for clarity in classification of event and reporting requirements. These requirements have been stressed in training for licensed operators and other personnel involved in the Emergency Plan.

STATUS OF SELF-ASSESSMENT

We plan to continue to implement the recommended actions and will keep the NRC staff apprised of our disposition of the recommendations which will be done under the direct cognizance of the Vice President, Nuclear Production. However, we do not consider the recommendations to be commitments. As outlined in the BACKGROUND paragraph of this letter, we consider most of these actions to exceed those required to correct the violations contained in the NOV. A copy of the current status is attached for your information. As can be seen, we are following up on the recommendations aggressively.

The schedule extension for this response was agreed to in a teleconference between Paul Frederickson (NRC/Region II) and Ed Froats (FPC).

Sincerely,



P. M. Beard, Jr.
Senior Vice President
Nuclear Operations

KRW:mag

Att.

cc: Regional Administrator
Deputy Executive Director for Operations

GENERIC IMPLICATIONS OF REACTOR TRIP EVENTS IN DECEMBER 1991
STATUS OF CORRECTIVE ACTIONS - AUGUST 1992

ITEM

ITEM STATUS

OPERATIONS

- | | | |
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| A1 | Training for shift which will restart the plant | Complete. Training was provided through the Licensed Operator Requalification program using Lesson Plan ROT-9-26. |
| A2 | OSB entries for all three trips | Complete. Operations Study Book (OSB) entries 9112.01, 9112.02, and 9112.04 addressed the reactor trips on 11/25/91, 12/03/91, and 12/08/91 respectively. |
| A3 | Refresher S/U training for available operators | Complete. Training was provided through the Licensed Operator Requalification program using Lesson Plan ROT-9-26. This training included all available operators and SOTAs, specifically including those doing the startup. This training was also conducted for the crew doing the restart from the April 1992 reactor trip recovery outage and for operating crews prior to restart from 8R. |
| B1 | Reinforce Man-On-Call concurrence for required actions (especially work in systems that can trip the plant) | Complete. The policy of utilizing the Man-On-Call as a resource during any unusual or off-normal occurrence or plant evolution has been established and the practice is being reinforced during simulator training. A plant management commitment has been made to make the Man-On-Call available for training purposes. Additionally, a dedicated telephone line has been installed at the simulator site so that simulator crews can practice communication with the Man-On-Call during selected practice sessions. |

- B2 Reinforce SRO concurrence for required actions (especially bypassing "ES")
- Complete.** Operations Study Book (OSB) entry 9112.04 addressed Engineered Safeguards (ES) Guidance, and the need to notify the SSOD prior to bypassing any ES actuation. This guideline further provides details regarding under which conditions bypassing ES is/is not acceptable. Procedure AI-500, Conduct of Operations, has been revised to include a section on bypassing safety systems actuations and approvals required prior to such bypasses.
- B3 Correct any information resource deficiencies
- Complete.** Several revisions to procedure OP-203, "Plant Startup", have been completed. These revisions address the topics to be discussed by the operators at a pre-job meeting; condensate control operations; and turbine generator start-up, including the requirements for auto or manual breaker closure actions.
- B4 Balance shift staffing
- Complete.** Procedure AI-500, Conduct of Operations, includes the requirement for a balance in shift staffing under "Responsibilities" of the Nuclear Operations Superintendent. These requirements specifically address consideration of experience levels, personnel behavioral compatibility, and overall management styles in achieving a cohesive operating team.
- B5 Review "Shift Manager" concept
- Complete.** The Shift Manager concept has been reviewed and appropriate recommendations for this position have been made. The Shift Manager will be an additional position on shift and will currently hold (or have held in the past) an active SRC license. When fully staffed, there will be five Shift Managers working a 12 hour shift rotation. This program will be partially implemented by December 1992. Full staffing will occur following completion of the 1993 SRO license class pending successful results. To date, four prospective shift managers have been named, two of which are currently in SRO training.

C1 Additional CNOs on shift

Complete. Six Nuclear Operator positions have been reclassified to Chief Nuclear Operator and filled.

MAINTENANCE

A1 Review other 8M work

Complete. A review of work completed during the Midcycle 8 outage was performed to identify potential maintenance items that could cause plant transients. This review was completed prior to start-up and included a review of AHF-2A/2B work, work performed by contractors, MOVATS work and work on equipment critical to plant operations which included equipment critical to pressure, temperature, and reactivity control. Following the review, a list of actions to be completed prior to start-up was developed and these actions completed.

A2 Revise SP-324

Complete. SP-324, Containment Inspection, was revised to require a visual observation to ensure that a three inch gap exists between the fuel transfer canal seal plate and the fuel transfer canal floor, with a sign-off specific for that observation.

B1 Evaluate methods for review of PMT when WR scope expands

Complete. CP-113B, Work Request Evaluation, has been revised to provide more explicit guidance for the re-evaluation and post-maintenance test review when the work scope changes from the original evaluation. Additionally, training has been provided (and documented by attendance sheets) to the First-Line supervisors and Senior Shop Supervisors on the need to have work packages reviewed for post-maintenance test changes when the work scope changes from the original evaluation.

B2 Evaluate methods to involve System Engineers more closely in maintenance

Complete. An evaluation of methods to involve system engineers more closely with maintenance and post-maintenance testing on their systems has been completed during the Spring 1992 outage. The Systems Engineering Manual (Rev. 4) has been revised to address these issues, and its requirements will be applied in appropriate cases. AI-255B, Guidelines for System Outages for CR-3, has been developed by the Scheduling department incorporating a "System Manager" concept which provides for leadership of the Pre-outage (system) Planning team and for technical oversight. The above action completes the intent of this recommendation. However, further enhancement in this area will be considered as an ongoing activity with additional corrective actions as described in the current revision to the Key Plant and Equipment Problem List under "Control and coordination of system/component maintenance". Maintenance/Component engineering has become the first point of contact for all shop questions.

C1 Improve documentation of work performed

Open. A review and evaluation of work package documentation was performed and the concern for proper documentation has been recognized. This review also revealed that this same documentation problem exists in shop logs. To raise the quality level for work package documentation and shop log keeping, written standards for both will be developed. Information derived from the Refuel 8 outage is being factored into these standards, which are expected to be completed during September 1992. Personnel will be trained on the content of the new guidance once developed.

C2 Monitor quality of work package completion

Open (Ongoing periodic reviews of work package documentation have been conducted in the past). Following the issuance, during September 1992, of written standards for both work package documentation and shop logs, maintenance department personnel will develop acceptance criteria to be used by

Quality Auditing personnel and Work Controls in reviewing a sample of work packages prior to closure. These routine, periodic reviews will be directed toward adequacy of work package descriptive information, proper identification and disposition of identified problems, and adequate control/application of material used in the work activity. The Planning Department is currently monitoring the work package closure documentation by reviewing selected work packages and the review of closure information on selected work packages on MACS. The results of these reviews will be evaluated and identified deficiencies will be corrected. Additionally, Quality Programs has committed to the inclusion of work package reviews as a standard part of the audit program. The frequency of such audits will be adjusted based on indicated need.

D1 Reduce maintenance overtime in future outages

Complete. The maintenance department reviewed the excessive overtime issue and established a policy which limits scheduling of personnel to a maximum of 60 hours per week, and does not permit working more than 72 hours per week.

TRAINING

A1 Provide S/U training prior to S/U in future outages

Complete. Restart training is an on-going activity and has been conducted for at least the last three outages. FPC intends to apply this practice to other selected outages as follows: FPC management designates the crew(s) to start the plant and trains them in the restart. This approach was most recently applied during the restart from the 8R outage.

A2 Supplement operating crews during S/U's

Complete. A revision to AI-500, Conduct of Operations, has been made to allow the Shift Supervisor additional authority to supplement the operating crew with additional personnel during plant startups and other off normal evolutions. The Shift Manager concept and Shift Technical Advisors "on shift"

(discussed elsewhere in this report) will provide additional assistance to the operating crew.

B1 Remedial training for
shift on duty during trip
#3

Complete. The crew manning the control room during the 12/8/91 reactor trip was given remedial training in the classroom as well as the simulator. The classroom training consisted of training on how to distinguish between LOCAs, overcooling, and inadequate heat transfer. This training was completed under Lesson Plan ROT 3-20, Symptom Oriented Procedure Philosophy. Simulator training consisted of upsets in RCS pressure control under ROT 9-9, Variable Size LOCAs, and diagnostic skill development during different plant upsets under ROT 8-24, Instrument Failures.

Additionally, the crew was trained on faulted reactor startups, including a demonstration of the 12/8/91 trip under ROT 9-100. To ensure that the crew understood all three reactor trips, special training was conducted during the first requalification cycle of 1992. This special training was conducted under ROT 4-49, Special Training, which constituted a case study of all three reactor trips. This training investigated the sequence of events, what went wrong, what actions the operators took, what actions they should have taken, what procedures were revised as a result of these trips, and new guidance on bypassing any safeguards system.

C1 Develop guideline for bypassing safety functions

Complete. AI-500, Conduct of Operations, now includes guidance on bypassing of safety system actuations, including ES actuations. The CR-3 policy states that it is contrary to the policy to bypass or prevent automatic safety functions from performing their intended function. This policy does allow bypassing of automatic safety system actuation provided that such placement is appropriately approved (by the SRO) prior to placing the system in bypass and, further, that such placement is directed by an approved plant procedure.

C2 Train operators on guideline

Complete. In order to ensure that all licensed operators were aware of the 12/8/91 reactor trip, as well as the reactor trips on 11/25/91 and 12/2/91, special training was conducted for all operating crews during the first requalification cycle of 1992. As part of this training, ROT 5-49, Special Training, was used to conduct a case study of the three reactor trips. This training investigated the sequence of events, what went wrong, what actions the operators took, what actions they should have taken, and what procedures were revised as a result of these trips. The procedure changes included new guidance on bypassing any safeguards system. This guidance is specified in Operations Study Book entry #9112.04, and AI-500, Conduct of Operations. Training on this new guidance on bypassing any safeguards system was also conducted during this Special Training.

- D1 Enhance operator training in "normal operations" **Complete.** This action was intended to create a commitment to expand training in this area in the future. As a result, some sessions have been conducted and others will be as an on-going activity. In addition to classroom training in normal operations, simulator training will be increased in this area. To assure a continued balance between normal operations and severe accident interests, management involvement in training has also increased, including more frequent participation by Directors in the observation and evaluation of training in both maintenance and operations.
- D2 Review/approval of lessons learned **Complete.** This is an ongoing activity by means of the continued free flow and feedback of information between operations and training. A review and approval of "lessons learned" by operations personnel from the three reactor trips was conducted by the Training Department and the information derived was used to prepare ROT 5-49 Special Training, addressing the three reactor trips.
- E1 Restructure composition of crew on duty during trip #3 **Complete.** Following appropriate evaluations, the operating crew that was on shift during the third trip was restructured. The Shift Supervisor and Assistant Shift Supervisor were placed on different crews and the licensed operators were likewise reassigned to take advantage of varied experience levels.
- E2 Review shift composition practices **Complete.** The methods utilized in determining shift crew composition have been reviewed and appropriate enhancements have been included in a revision to AI-500, Conduct of Operations. These enhancements require the Nuclear Operations Superintendent to consider experience levels, personnel behavioral compatibility and management styles.

F1 Develop questioning attitude

Complete. Developing a "questioning attitude" has been proceduralized in AI-500, Conduct of Operations, by establishing a general responsibility for all Operations personnel to develop and maintain a questioning attitude. AI-501, Shift and Simulator Assessment, will be utilized to stress a questioning attitude as part of the management overview. Additionally, management continues to stress the need for a "questioning attitude". At a recent Operations Crew dinner, the Vice President, Nuclear Production presented cards to the members of the Operations Crews, which present a simple six step plan: defining the problem; consulting the resources; deciding on the course of action; considering the consequences of being wrong; mitigating or eliminating the consequences; and acting to implement the decision. The questioning approach was also used during the April 1992 outage and electrical troubleshooting evolution to evaluate and make appropriate changes to available electrical power supplies.

F2 Involve MOC/SOTA/Engineer on call in simulator exercises

Complete. Direct involvement of the MOC/SOTA/Engineer required no change in the conduct of simulator training other than the installation of a live telephone in the simulator control room. This phone has been installed. Simulator requalification training includes full participation by the SOTAs and instructors role playing as the MOC or Engineer, as required. The plant staff has committed to enhance the involvement of the MOC/Engineer in simulator exercises by having the actual MOC respond to calls from the simulator during selected scenarios, reinforcing policy and practice to keep senior management informed and involved in operating decisions.

F3 Emphasize use of annunciator response procedures

Complete. Criteria regarding use of annunciator response procedures is included in AI-501, Shift and Simulator Assessment, and in AI-500, Conduct of Operations. Emphasis is placed on the use of these procedures during the training sessions given to operations personnel.

G1 Define role of the SOTA

Complete. The role of the SOTA has been more precisely described to act as an advisor to the shift supervisor relative to plant status and to recommend mitigation actions on the strategic level, as appropriate. As an advisor, the SOTA must remain independent of other members of the shift by maintaining a questioning attitude. After the plant status is either stable or predictably trending, the SOTA may assist the shift supervisor in other activities.

G2 Improve training on SOTA diagnostic skills

Complete. SOTA diagnostic skills improvements has been addressed on a variety of fronts. SOTAs attend Licensed Operator classroom and simulator requalification training; participation in this training serves to improve the SOTAs' knowledge level and allows them to hone their diagnostic skills. SOTA-specific simulator training concentrating on the improvement of diagnostic skills has also been completed. In addition to the original intent of this recommendation, the purchase of an operational "see-through" reactor model in 1993 will further provide a training tool to reinforce thermodynamic theory with visual/physical evidence.

G3 Enhance operational experience and teamwork opportunities for SOTAs

Complete. The SOTAs attended the recent INPO Team Training course. The SOTA role has been better defined and operations personnel have been made more aware of how and where the SOTA fits on the operating crew team. Current plans are to place the SOTAs "on shift" as opposed to their current "on-call" status. When implemented later this year, this action is expected to have an

additional positive impact on the teamwork between the SOTAs and the operating crew.

G4 Ensure verification procedures do not dilute OTA ability to "get the big picture"

Open. A revision to VP-540, Runback Verification Procedure, addressing this issue has been completed. A revision to VP-580, Plant Safety Verification Procedure, has been submitted for review and approval with an expected issuance in September 1992. This procedure will include flow charts for diagnosing symptoms of inadequate heat transfer. An effort to totally reassess the needs of the SOTA in terms of verification procedures has commenced. This effort is expected to result in one or more totally new verification procedures. The expected issuance date for these new verification procedures is January 1993.

G5 Develop diagnostic aids for OTA's

Open. Diagnostic aids for the SOTAs have seen substantial improvement since the three 1991 reactor trips. A revision to VP-580, Plant Safety Verification Procedure, has been submitted for review and approval. This procedure will include a flow chart for diagnosing symptoms of inadequate heat transfer. The expected issuance date for VP-580 is September 1992. A temporary recall system has been installed on the simulator to improve the diagnostic aids available to the SOTAs during training. This system will eventually be replaced by the new PICS (Plant Integrated Computer System). When installed, the PICS in combination with the safety parameter display system, should provide the desired diagnostic aids for the SOTA. Additionally, an investigation is being conducted into an EPRI "Expert System" which may provide additional diagnostic aids for the SOTAs in the form of "intelligent" software. A seminar titled "Introduction to Knowledge Based Systems for Utility Managers" is currently scheduled for October 1992.

ENGINEERING

- A1 Define Root Cause for RCV-14
- Complete. Failure Analysis 91-RCV-14-01 was performed for the RCV-14 failure, and the root causes for the depressurization of the RCS on 12/8/91, the failure of RCV-14 to close, and the false RCV-14 position indication are included in the Failure Analysis report.
- A2 Evaluate RCV-14 history
- Complete Failure Analysis 91-RCV-14-01 was performed for the RCV-14 failure, and the RCV-14 Maintenance History was included as Attachment 3 of this report. The history included thirty-six entries extending from January 1980 through November 1991.
- A3 Accelerate failure history review for other equipment
- Complete. An improved program for Failure Analysis, the Maintenance Precursor Program, Root Cause Analysis correction, and the Repetitive Failure and Equipment Reliability Program all act to accelerate the identification process for equipment which may be susceptible to repetitive failure. Examples of the success of the improved program for Failure Analysis include three recent failure analyses addressing DHP-1A/B, AHF-1A, and SWP-1C. The maintenance Precursor Program is a pilot program which is intended to identify minor problems which may then be remedied prior to their development into major deficiencies. Root Cause Analysis corrective actions are an integral part of the Failure Analysis program, wherein recommended corrective actions for the root cause and contributing causes are assigned to the appropriate department for resolution. The Repetitive Failure and Equipment Reliability Program has been developed to include all CR-3 components. Selected information from both CMIS (Configuration Management Information System) and MACS (Maintenance Activity Control System) is being extracted and placed in a database for subsequent data reduction and report preparation. Additionally, a new procedure, CP-143, Repeat Maintenance Program Identification Evaluation and Tracking, provides additional data relative to this issue.

B1 Time study System
Engineering activities

Open. A time study of the System Engineer's daily activities is necessary for successful implementation of the System Manager concept. Progress is being tracked by both the Key Plant Problem List and NOTES (Nuclear Operations Tracking and Expediting System). Nuclear Plant System Engineering continues to provide monthly reports of tracked man-hours. This report will continue through September 1992, when analysis and recommendations will be developed.

B2 Take Corrective action on
the recommendations of
the time study

Open. Action for this item follows completion of recommendations of the time study of the System Engineer's daily activities. In the interim, the System Manager concept was implemented on a trial basis during the April Mode 5 outage and will continue to be applied to other significant system projects on a case basis.

B3 Establish performance
indicators for vital
functions

Open. The Systems Engineering Manual (Rev. 4) establishes the mechanism by which vital engineering functions are tracked by performance indicators visible to senior management. Data and trending graphs are being prepared monthly on thirteen key items, including: REAs received, processed, and backlog; Problem Report backlog; NOTES items received, processed, backlog, and overdue; Procedure reviews; manhour accounting; and procedure revisions. Implementation of system walkdowns is expected to be accomplished during the last quarter of 1992.

C1 Establish Root Cause
criteria

Complete. Establishment of "root cause threshold" criteria enables personnel to determine when the preparation of a failure analysis and root cause determination is appropriate. NOD-40, Root Cause/Failure Analysis, in concert with CP-144, Root Cause Analysis, establish the desired criteria.

C2 Establish
"brainstorming"
practices

Complete. Brainstorming practices are addressed in the Systems Engineering Manual (Rev. 4). This manual provides guidance for aggressive failure analysis utilizing a team approach. The team may contain personnel from any department who can provide a needed expertise. Plant management has endorsed the concept. The AHF-1A as well as the DHP-1A/B failure analyses were examples of the effectiveness of the program. Additionally, the FPC PACE (People Achieving Corporate Excellence) program provides excellent training, guidance, and recommendations in "brainstorming" practices as well as a variety of other problem solving tools.

C3 Establish single point of
accountability

Complete. When the System Manager concept is invoked by AI-255B, Guidelines for System Outages for CR-3, single point of accountability responsibilities will be established for troubleshooting practices. However, interim practice has been established as follows: A written troubleshooting plan must be prepared prior to performing the evolution. A System Manager maintains the overall lead (single point accountability) and is accountable for technical direction, root cause determination, and coordination of remaining activities to correct the problem. The Lead Shop Supervisor is accountable for the implementation of the troubleshooting plan. The Lead Planner is accountable for planning and evaluation of the troubleshooting work package. AI-255B, Guidelines for System Outages for CR-3, addresses this issue from a system outage standpoint, NOD-40, Root Cause\Failure Analysis, addresses root cause determinations, while CP-113B, Work Request Evaluation, addresses troubleshooting.

C4 Establish method to issue troubleshooting/correction action plans

Complete. CP-113B, Work Request Evaluation, and MP-531, Troubleshooting Plant Equipment, currently control plant troubleshooting evolutions. A written troubleshooting plan must be prepared prior to performing the work. This plan must consider if the troubleshooting may adversely affect equipment whose operation is vital to the plant, (including entry into a Technical Specification action statement), initiation of a plant transient, or limitation of power production. Additional planning actions must be taken when the troubleshooting task will include more than one crew, more than one discipline, or expertise beyond that normally available to the shop. Additionally, human factors procedural enhancements are ongoing.