



FPL

ST. LUCIE PLANT
RADIOLOGICAL EMERGENCY PLAN

REVISION 31

Approved by: _____

TH Lumberg
President, Nuclear Division

Date 9 / 13 / 96

2. ORGANIZATION, FACILITIES, AND SUPPORT SERVICES (continued)

2.4 2. Technical Support Center (TSC)

The company maintains an on-site Technical Support Center to provide the Control Room with in-depth diagnostic and engineering assistance without adding to congestion within the Control Room. The TSC interfaces with the EOF regarding those diagnostic and engineering decisions. This assistance can help determine the operational decisions that would be appropriate to best control and mitigate the consequences of the emergency. The TSC is located adjacent to the Unit 1 Control Room.

Activation of the Technical Support Center will be initiated by the Emergency Coordinator in the event of an Alert, Site Area Emergency or General Emergency. Arrangements have been made to staff the TSC in a timely manner.

The Technical Support Center contains pertinent records and drawings.

The Technical Support Center has an emergency communications network similar to the Control Rooms. The TSC also has the NRC FTS Emergency Telecommunications System. See section 4.6 for a more detailed description of the FTS system.

3. Operational Support Center (OSC)

The company maintains an on-site Operational Support Center (OSC) to serve as an assembly point for auxiliary operators, health physics technicians, maintenance personnel, and other plant personnel available to support the emergency response. Required staff will be assigned to appropriate activities by the Emergency Coordinator or his/her designee.

Equipment that can be used by personnel dispatched from the OSC is stored in the Service Building. **Table 2-4** indicates the types of material and equipment stored there.

Activation of the OSC will be initiated by the Emergency Coordinator. The OSC will be activated and in operation for an Alert, Site Area Emergency or General Emergency. Arrangements have been made to staff the OSC in a timely manner.

The OSC is maintained in the second floor large conference room in the North Service Building. Telephone communications are maintained between the OSC and the Technical Support Center.

2. ORGANIZATION, FACILITIES, AND SUPPORT SERVICES (continued)

2.4 4. Alternate Operational Support Center

In the event that the OSC becomes untenable, the Emergency Coordinator will designate an alternate location.

5. Emergency Operations Facility (EOF)

The company maintains an Emergency Operations Facility from which evaluation and coordination of FPL activities related to an emergency can be carried out and from which FPL can provide information to federal, state, and local authorities.

The Emergency Operations Facility is located at the intersection of State Route 712 (Midway Road) and I-95 approximately 10 1/2 miles west of the St. Lucie Plant. The EOF has sufficient space to accommodate the Florida Power & Light Company response organization and designated representatives of the federal, state, and local authorities. Alternate temporary locations for the Emergency Operations Facility may be designated by the Recovery Manager if a natural disaster or other (non-radiological) external event significantly affects the operational capability of the facility.

/R31

The Emergency Operations Facility has an emergency communications network including but not limited to, Local Government Radio (LGR), commercial telephone lines, Hot Ring Down (HRD) phone, NRC ENS, NRC HPN, NRC counterpart links, ESATCOM, and various Florida Power & Light Co. maintained radio systems. Essential, precalculated emergency data and pertinent reports and drawings are readily available.

Activation of the Emergency Operations Facility is the responsibility of the Recovery Manager and is required for a Site Area Emergency or General Emergency. The RM should place the emergency response staff on standby in the facility for an Alert. Arrangements have been made to activate the EOF in a timely manner.

/R31

6. Emergency News Center (ENC)

An Emergency News Center (ENC) is provided to allow the news media access to information from the Emergency Operations Facility. The Emergency Information Manager will designate an individual to supervise the ENC. The ENC is co-located with the EOF (Midway Road/I-95 intersection).

7. MAINTAINING EMERGENCY PREPAREDNESS (continued)

7.2 Emergency Response Training

1. Objectives

The primary objectives of emergency response training are as follows:

1. Familiarize appropriate individuals with the Emergency Plan and related implementing procedures.
2. Instruct individuals in their specific duties to ensure effective and expeditious action during an emergency.
3. Periodically present significant changes in the scope or content of the Emergency Plan.
4. Provide refresher training to ensure that personnel are familiar with their duties and responsibilities.
5. Provide the various emergency organization groups with the required training that will ensure an integrated and prompt response to an emergency situation.

2. Training of On-site Emergency Response Organization Personnel

Training programs have been established for personnel working at the plant site. The programs include initial indoctrination and subsequent retraining.

The training program for members of the on-site emergency response organization will include practical drills, as appropriate and participation in exercises, in which each individual demonstrates an ability to perform assigned emergency functions.

The St. Lucie Plant Training Manager is responsible for the conduct and documentation of initial training and annual retraining programs for on-site FPL Emergency Response Organization (ERO) personnel. Emergency teams will receive specific training as specified in the following subsections. The Emergency Planning Coordinator is responsible for the content and accuracy of the Emergency Planning Training. Each new employee permanently assigned to work at the St. Lucie Plant shall be given initial orientation training. For employees not assigned specific responsibility or authority under the Emergency Plan or Procedures, such training shall, at a minimum, provide information describing the action to be taken by an individual discovering an emergency condition, the location of assembly areas, the identification of emergency alarms, and the action to be taken upon hearing those alarms.

/R31

7. MAINTAINING EMERGENCY PREPAREDNESS (continued)

7.2 2. Training of On-site Emergency Response Organization Personnel (continued)

For employees with specific assignments or authorities as members of emergency teams, initial training and annual retraining programs will be provided. Training must be current to be maintained on the site Emergency Team Roster. The site Emergency Team Roster is updated by the Plant Training Manager once each calendar month. Security maintains training records for members of the Security.

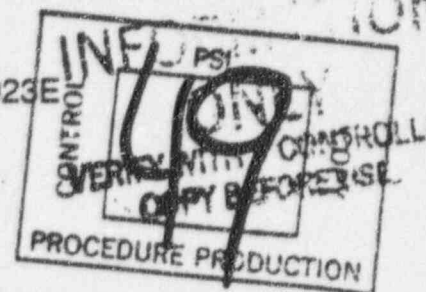
/R31

The following provides a description of the training provided to personnel filling the indicated positions.

1. Emergency Coordinator

- a. Interpretation of plant and field data and how it relates to emergencies and their classification (i.e. emergency action level determination per Chapter 3).
- b. Prompt and effective notification methods, including the types of communication systems.
- c. Method of activating the Florida Power & Light Company Emergency Response Organization (ERO).
- d. The methods used for estimating radiation doses and recommending off-site protective actions.
- e. Emergency Plan familiarization
- f. Emergency Plan Implementing Procedures (EPIPs) familiarization
- g. Communications and record-keeping methods
- h. Accident assessment and corrective action (licensed operators only).

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT
E-PLAN IMPLEMENTING PROCEDURE NO. 3100023E
REVISION 72

1.0 TITLE:

ON-SITE EMERGENCY ORGANIZATION AND CALL DIRECTORY

2.0 REVIEW AND APPROVAL:

Reviewed by Facility Review Group _____ 7/25 1975

Approved by K. N. Harris _____ Plant General Manager 7/29 1975

Revision 72 Reviewed by F R G _____ 9/12 1996

Approved by J. Scarola _____ Plant General Manager 9/12 1996

**THIS PROCEDURE HAS BEEN COMPLETELY REWRITTEN, PLEASE READ
ENTIRE PROCEDURE BEFORE PROCEEDING.**

/R72

3.0 SCOPE:

3.1 Purpose

This procedure provides instructions and phone numbers necessary to activate the On-Site Emergency Organization (see Figure 1) for shift augmentation in response to an emergency declaration. In the appendices are the names, phone numbers and alternates for company emergency personnel, as well as phone numbers of County, State and Federal agencies.

S	OPS
DATE	_____
DOCT PROCEDURE	_____
DOCN	3100023E
SYS	_____
COMP COMPLETED	_____
ITM	72

ST. LUCIE PLANT
E-PLAN IMPLEMENTING PROCEDURE NO. 3100023E, REVISION 72
ON-SITE EMERGENCY ORGANIZATION AND CALL DIRECTORY

8.0 INSTRUCTIONS:

- 8.1 Upon notification by the Emergency Coordinator (EC), the on-shift Emergency Response Organization shall assemble and prepare to respond as necessary to the emergency.
- 8.2 Upon notification by the EC, the Duty Call Supervisor (DCS), will initiate staff augmentation in accordance with Figure 3, Staff Augmentation Call Tree. The DCS will use the (automated dialing) Emergency Recall System or Appendix A, Duty Call Supervisor Call Directory, to notify persons to fill the positions of Recovery Manager, TSC Health Physics Supervisor, TSC Supervisor, Emergency Coordinator, Operations Coordinator, TSC Chemistry Supervisor, OSC Supervisor and TSC Security Supervisor.
- 8.3 Instructions for use of the Emergency Recall System are in the ANPS office in either Control Room. If the system is not used continue with the next step. *What if system is used?*
- 8.4 The DCS will record the names of persons filling positions as well as the expected times of arrival at the plant on a form similar to Figure 3.
- 8.5 The Recovery Manager shall determine the action to be taken by EOF Responders.
1. For an Alert, EOF Responders should be notified and placed in a standby status or mobilized to respond to the EOF.
 2. The EOF shall be activated in a Site Area Emergency and/or General Emergency.
- 8.6 Persons filling the positions of TSC HP Supervisor and TSC Chemistry Supervisor will notify the appropriate number of individuals from their respective departments in accordance with Figure 3 (See Appendix B, TSC Health Physics Supervisor and TSC Chemistry Supervisor Call Directory).
- 8.7 The TSC Supervisor (alternate) shall call the necessary persons to establish the minimum staff per Figure 3. He may call additional persons, as necessary (See Appendix C, Technical Support Center Supervisor Call Directory).
- 8.8 The OSC Supervisor (alternate) shall call the necessary persons to establish the minimum staff per Figure 3. He may call additional persons, as necessary (see Appendix D, Operational Support Center Supervisor Call Directory).

EICS ENFORCEMENT WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

EA NUMBER: 4641-96E103

FACILITY: St. Lucie

SUBJECT: EP Issues

ATTENDEES

A. Beland C. Evans
F. Helda (NRC) C. Julia
E. Mersch B. Wray
K. Baird J. Gander
J. Kirk J. Reberman
S. Tracy (EDO) M. Saturno
K. Rands R. Pederson
A. Wiers F. Cantor

- ☒ PANEL ☐ PEC ☐ CAUCUS
☐ OTHER ☐ OI BRIEF

INSPECTION END DATE: 11/1/96

PREPARED BY: A. Beland

DATE: 11/13/96 TIME: 2:20

I. EICS STAFF NOTES:

Issues part of an allegation inspection - alleged not getting management support → 15 concern

(A) ability to augment site staff
(B) training
Recommendation: Allgo have info formally to be. day of insp.

Nuclear sit 5th Policy delineated in Policy → Unit
concerned = 5th (breakdown)

(A) a couple of days before inspection - licensee conducted test of auto-dialer & automated resp
- NRC ID'd back-up system wouldn't adequate
- backup augmentation - manual call out - out date #3
people didn't even know on call tree - WOULD NOT HAVE BEEN ABLE TO STAFF IN A TIMELY MANNER
- Auto-dialer used in drills/exercises
- Not Operable
- Computer
- improper controls & access

* VIA TELEPHONE
- allegation - inadequate admin controls - substantiated
- alleged went to management - but they didn't respond
x 4/96 ID'd to management
- why - had so much to do couldn't take as a priority to complete
- person resp. for auto-dialer - left this sys. was an anomaly

EE/82

ENFORCEMENT ACTION WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

II. Civil Penalty Assessment

A. First non-willful SL III violation in 2 years/2 inspections? YES or NO

Previous escalated cases:

B. Identification Credit? YES - NO - N/A

NRC identified?

Licensee identified?

Revealed through an event?*

Prior opportunities?

C. Corrective action credit? YES - NO - N/A

Immediate corrective actions:

Long term corrective actions to prevent recurrence:

D. Discretion applied? Yes or No: Reason why.

E. Civil Penalty: _____

F. Recommendation for predecisional enforcement conference:

ENFORCEMENT ACTION WORKSHEET EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

NOTE: Complete the following information for each violation

ISSUE:

III. Documentation of Enforcement Panel/Caucus Consensus

- A. Preliminary Severity Level (Prior to Application of any Discretion, From Part I) _____
- B. Increase Severity Level based on Aggregation? _____
- C. Increase Severity Level for Repeat Violations? _____
(Address requirements of ROI 0903)
- D. Increase Severity Level for Willfulness? _____
- E. SEVERITY LEVEL _____ SUPPLEMENT/SECTION _____
- F. Recommended Civil Penalty _____
- G. Predecisional Enforcement Conference Necessary? _____
- H. Revision to Draft NOV Required? _____
- I. Formal Review by OE Required? _____
- J. Special Action Items / Message to Licensee / Comments

B. Numerous inadequacies in ET Training Program
- generally don't have drills - A team always on houses
- failed to have a system to remove people from roster when
untrained

A+B were in Problem Report system - who didn't do/postpone
C.A. said not a problem

B. Case to 12 or more who have a training deficiency

CA vio! - No mat appendix B

SL III → VIII. C. 3. add 3 violations (including the one in Section 9)

Removed its Commitment or Procedures w/o complying with
SER - possible denations

CA adequacy - on record - programmatic control
for corrections in EP Area

TODAY

Can they staff today w/ qualified people? Call
Jadden → procedure review
drill participation

Aggregate III

Previous - YES

ID - ID'd auto dial

NRC back-up system

training - mixed

NO

few opportunities

Allow ID'd in April 92

+ Jan 1994 (Training)

know EP expectations

coming

Trinice was aware of
issues in early 1990's

CA - Unknown

(D) → Solp 1 ~ NO

Shamed by base EP \$50K

PEC needed

EICS ENFORCEMENT WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

EA NUMBER: 905-464 (closed)

FACILITY: St. Lucie

SUBJECT: EP program

☒ PANEL ☐ PEC ☐ CAUCUS
☐ OTHER ☐ OI BRIEF

INSPECTION END DATE: 11-01-96

PREPARED BY: Urye

* Winters

ATTENDEES

Rohygar

Tracy

Kreh

Barr

Merschhoff

Hebdon

Bolova

Lordis

Evans

Tulien

Urye

Satouin*

Conlor*

Pedersen*

(* VIA TELEPHONE)

DATE: 11/3/96 TIME: _____

I. EICS STAFF NOTES:

Viol 1 - failure of autodialer

lic conducted test day before

insp. also backup call tree did not work on

some indivs not aware of req to support

lic found autodialer had not worked for 2 1/2 months

CI reported

? what did CI say about autodialer > was it one of specific
issues identified? For Barr/Kreh fully reviewed altn received
from CI?

Viol 3 - inadequate training

break down in EP training for emergency response
program.

EEE/83

ENFORCEMENT ACTION WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

II. Civil Penalty Assessment

A. First non-willful SL III violation in 2 years/2 inspections? YES or **NO**

Previous escalated cases: *see EAW -*

B. Identification Credit? YES - **(NO)** - N/A

NRC identified?

Licensee identified?

Revealed through an event?*

then go to

lic aware of insp and aware of Immobile Regs - had info in early 1996

→ Prior opportunities? *April 96, by CI*

C. Corrective action credit? YES - NO - N/A

Immediate corrective actions:

Long term corrective actions to prevent recurrence:

D. Discretion applied? Yes or No: Reason why.

undetermined

E. Civil Penalty: *50K?*

*no from last insp in 1995
last auto dealer test Aug 1995*

F. Recommendation for predecisional enforcement conference:

why didn't they pursue that they had a problem when they knew about it in April 1996 -

SALP end Jan 96

ENFORCEMENT ACTION WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

NOTE: Complete the following information for each violation

ISSUE:

III. Documentation of Enforcement Panel/Caucus Consensus

- A. Preliminary Severity Level (Prior to Application of any Discretion.
From Part I) _____
- B. Increase Severity Level based on Aggregation? _____
- C. Increase Severity Level for Repeat Violations? _____
(Address requirements of ROI 0903)
- D. Increase Severity Level for Willfulness? _____
- E. SEVERITY LEVEL III problem SUPPLEMENT/SECTION VIII.C.3
- F. Recommended Civil Penalty _____
- G. Predecisional Enforcement Conference Necessary? _____
- H. Revision to Draft NOV Required? _____
- I. Formal Review by OE Required? _____
- J. Special Action Items / Message to Licensee / Comments

*there are broad problems in EP program -
 can we address their lack of adequate CA
 - inability to activate EA
 - people not trained? can they field a fully trained
 team?*

EICS ENFORCEMENT WORKSHEET

EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

EA NUMBER: _____

FACILITY: St. Louis

SUBJECT: CP

☐ PANEL ☐ PEC ☐ CAUCUS

☒ OTHER ☐ OI BRIEF

RA Brief

INSPECTION END DATE: 11/26/96

PREPARED BY: _____

ATTENDEES

<u>A. Basora</u>	<u>K. Bass</u>
<u>S. Elmer</u>	<u>A. Kikam</u>
<u>J. Tauda</u>	<u>P. Friedman</u>
<u>B. Wye</u>	<u>C. Julian</u>
<u>E. Murschiff</u>	<u>K. Stratten</u>
<u>C. Evans</u>	<u>L. Hayes</u>
<u>C. Castro</u>	<u>J. Jander</u>
	<u>J. Campbell</u>

DATE: 12/04/96 TIME: 9:45

I. EICS STAFF NOTES:

3 vio - 1 deviation

① Staff Augmentation Capability

Auto Dialer System - computer glitch - left in a state that it wouldn't call out - no call out

1/22 - 10/3 = 11/2

↳ far days before inspection

VP request for test

Back-up system - pushes not knowledgeable of how to accomplish - no procedures - untrained - call tree

② Training

unfilled commitments

92 ERD initial or annual retraining - primarily OSC personnel not trained on EC, RT, OSC, Reading Team
Failed to remove personnel from roster untrained people

③/④2 → failed to put program requirement in place when removed from T/S

* VIA TELEPHONE

failed to establish procedure & follow

EEF/84

ENFORCEMENT ACTION WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

II. Civil Penalty Assessment

A. First non-willful SL III violation in 2 years/2 inspections? YES or NO

Previous escalated cases:

B. Identification Credit? YES - NO - N/A

NRC identified?

Licensee identified?

Revealed through an event?*

Prior opportunities?

C. Corrective action credit? YES - NO - N/A

Immediate corrective actions:

Long term corrective actions to prevent recurrence:

D. Discretion applied? Yes or No: Reason why.

E. Civil Penalty: _____

F. Recommendation for predecisional enforcement conference:

ISSUE:

A. Preliminary Severity Level (Prior to Application of any Discretion, From Part I) _____

C. Increase Severity Level for Repeat Violations?
(Address requirements of ROI 0903)

E. SEVERITY LEVEL _____ SUPPLEMENT/SECTION _____

G. Predecisional Enforcement Conference Necessary? _____

I. Formal Review by OE Required? _____

[illegible]

Lined area for text entry.

EICS ENFORCEMENT WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

EA NUMBER: 96-464

ATTENDEES

FACILITY: Ad. House

SUBJECT: Emergency Planning

☐ PANEL ☐ PEC ☐ CAUCUS
☐ OTHER ☐ OI BRIEF

INSPECTION END DATE: _____

PREPARED BY: Annex/Poland

DATE: 2/10/96 TIME: _____

I. EICS STAFF NOTES:

① Manual Call-out

5 individuals (end of call list - 15 minute delay)
could have gotten #5 outside Emergency Plan

R.C. - inadequate management prioritization

- inadequate self assessment

- frequency of testing of auto-dials inadequate

C.A. - all handset

② Training

R.C. → OSC allocation considered unnecessary

ERO/Rec. Plan outside EPs → considered adequate

C.A. — OSC in EP

ERO in EP

intro/acc to Rec Plan to be included 1/31/97

Plankett don't want to prescribe everything in advance →
intro/acc yes - detailed criteria no

* VIA TELEPHONE

EE-185

ENFORCEMENT ACTION WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

II. Civil Penalty Assessment

A. First non-willful SL III violation in 2 years/2 inspections? YES or NO

Previous escalated cases:

B. Identification Credit? YES - NO - N/A

NRC identified?

Licensee identified?

Revealed through an event?*

Prior opportunities?

C. Corrective action credit? YES - NO - N/A

Immediate corrective actions:

Long term corrective actions to prevent recurrence:

D. Discretion applied? Yes or No: Reason why.

E. Civil Penalty: _____

F. Recommendation for predecisional enforcement conference:

ENFORCEMENT ACTION WORKSHEET **EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING**

NOTE: Complete the following information for each violation

ISSUE:

III. Documentation of Enforcement Panel/Caucus Consensus

- A. Preliminary Severity Level (Prior to Application of any Discretion, From Part I) _____
- B. Increase Severity Level based on Aggregation? _____
- C. Increase Severity Level for Repeat Violations? _____
(Address requirements of ROI 0903)
- D. Increase Severity Level for Willfulness? _____
- E. SEVERITY LEVEL _____ SUPPLEMENT/SECTION _____
- F. Recommended Civil Penalty _____
- G. Predecisional Enforcement Conference Necessary? _____
- H. Revision to Draft NOV Required? _____
- I. Formal Review by OE Required? _____
- J. Special Action Items / Message to Licensee / Comments

Training

R.C. Inadequate mgmt support

3 deep in each position currently

classroom/drill to be qualified

all personnel on roster have participated in drill

Deviation

Believe information was plan - not violation

Final

Learned about via 2 (too prescriptive) + deviation

Training - not requirement for management

EICS ENFORCEMENT WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

EA NUMBER: 96-464

ATTENDEES

FACILITY: St. Lucie

See 96-458

SUBJECT: EP

- ☐ PANEL ☐ PEC ☒ CAUCUS
☐ OTHER ☐ OI BRIEF

INSPECTION END DATE: _____

PREPARED BY: A.T. Boland

DATE: 12/10/62 TIME: _____

I. EICS STAFF NOTES:

Prior - Yes

Vio B
Areas for procedural strengthening a.c. } Need Agency Position
b. OK } If can't get in 2 day -
pull out and call CRT

Question on required specificity

a. OK
c. weakness - ask them to address in writing

Vio A
No change of facts

Vio C OK

* VIA TELEPHONE

EEF/86

ENFORCEMENT ACTION WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

II. Civil Penalty Assessment

A. First non-willful SL III violation in 2 years/2 inspections? YES or NO

Previous escalated cases:

B. Identification Credit? YES - NO - N/A

NRC identified?

Licensee identified?

Revealed through an event?*

Prior opportunities?

C. Corrective action credit? YES - NO - N/A

Immediate corrective actions:

Long term corrective actions to prevent recurrence:

D. Discretion applied? Yes or No: Reason why.

E. Civil Penalty: _____

F. Recommendation for predecisional enforcement conference:

ENFORCEMENT ACTION WORKSHEET EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

NOTE: Complete the following information for each violation

ISSUE:

III. Documentation of Enforcement Panel/Caucus Consensus

- A. Preliminary Severity Level (Prior to Application of any Discretion, From Part I) _____
- B. Increase Severity Level based on Aggregation? _____
- C. Increase Severity Level for Repeat Violations? _____
(Address requirements of ROI 0903)
- D. Increase Severity Level for Willfulness? _____
- E. SEVERITY LEVEL _____ SUPPLEMENT/SECTION _____
- F. Recommended Civil Penalty _____
- G. Predecisional Enforcement Conference Necessary? _____
- H. Revision to Draft NOV Required? _____
- I. Formal Review by OE Required? _____
- J. Special Action Items / Message to Licensee / Comments

Riser - Yes

ID - No - mixed

CA - (A) CA good

(B) OK a. b.

(C) removed unequal'd workers / 3 deep class + drilled

Credit

No Discretion

to avoid vios. if

Excellent Opportunity to address allegers concerned

Base CP \$50,000K

Deviation — No → Handle through licensing process

ENCLOSURE 4

EICS ENFORCEMENT WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

(To be Completed by EICS per ROI 0912)

File
9656

EA NUMBER: EA 96-263

FACILITY: St. Lucie

SUBJECT: Overtime

☒ PANEL ☐ PEC ☐ CAUCUS
☐ OTHER ☐ OI BRIEF

ATTENDEES

<u>Cordis</u>	<u>Johnson</u>
<u>Gibson</u>	<u>Mye</u>
<u>Miller+</u>	<u>Poland</u>
<u>Reed+</u>	<u>Satowis+</u>

PREPARED BY: Mye

DATE: 1130 TIME: 07/23/96

I. EICS STAFF NOTES:

lic reviewed / OA
lic did recognize problem and
begin review -

Wrong doing considered - N/A indivs
thought they were ok - some mis-
understanding

Consensus - mgmt should be held
fully accountable - no lic operators were
involved, in field: working design notes

Scarola failed to do or have done
reviews on time sheets.

1) indivs not knowledgeable
2) mgmt not controlling =

training problem, mgmt problem
process problem

several aspects of mgmt control

EEF/87

ENFORCEMENT ACTION WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

(To be Completed by EICS per ROI 0912)

II. Civil Penalty Assessment

A. First non-willful SL III violation in 2 years/2 inspections? YES or NO

Previous escalated cases:

B. Identification Credit? YES - NO - N/A

NRC identified?

Licensee identified?

Revealed through an event?*

Prior opportunities?

C. Corrective action credit? YES - NO - N/A

Immediate corrective actions:

Long term corrective actions to prevent recurrence:

D. Discretion applied? Yes or No: Reason why.

E. Civil Penalty: _____

F. Recommendation for predecisional enforcement conference:

Second SLT - for ⁴ inadequate procedure

ENFORCEMENT ACTION WORKSHEET **EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING**

(To be Completed by EICS per ROI 0912)

NOTE: Complete the following information for each violation

ISSUE:

III. Documentation of Enforcement Panel/Caucus Consensus

- A. Preliminary Severity Level (Prior to Application of any Discretion.
From Part I) _____
- B. Increase Severity Level based on Aggregation?
- C. Increase Severity Level for Repeat Violations?
(Address requirements of ROI 0903)
- D. Increase Severity Level for Willfulness? _____
- E. SEVERITY LEVEL _____ SUPPLEMENT/SECTION _____
- F. Recommended Civil Penalty _____
- G. Predecisional Enforcement Conference Necessary? _____
- H. Revision to Draft NOV Required? _____
- I. Formal Review by OE Required? _____
- J. Special Action Items / Message to Licensee / Comments

OT during outage - people working

*Strong letter - accounting for hours
ineffective in controlling -*

audit problem -

EICS ENFORCEMENT WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

EA NUMBER: EA 96-464

FACILITY: ST. Lucie

SUBJECT: EP

☐ PANEL ☐ PIC ☒ CAUCUS
☐ OTHER ☐ OI BRIEF

INSPECTION END DATE: _____

PREPARED BY: Aruc

I. EICS STAFF NOTES:

ATTENDEES

SEE 96-458

(* VIA TELEPHONE)

DATE: 121096 TIME: 1330

Vio B / disc of Examples A, B, C

Vio B will only carry 2 examples = A + B.

Ex C should be discussed as a weakness
and ask for a response on Ex C.

Vio A: → OK

Vio C:

← do not include violation in lsc enf pkg.

RA briefed 121096 by AFG/EWA → OK

DE MAS/JXL briefed 121196

EEE/PR

ENFORCEMENT ACTION WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

II. Civil Penalty Assessment

A. First non-willful SL III violation in 2 years/2 inspections? YES or NO

Previous escalated cases:

B. Identification Credit? YES - NO - N/A

NRC identified?

Licensee identified?

Revealed through an event?*

Prior opportunities?

C. Corrective action credit? YES - NO - N/A

Immediate corrective actions:

Long term corrective actions to prevent recurrence:

D. Discretion applied? Yes or No Reason why. *Considered*

E. Civil Penalty: *50K*

F. Recommendation for predecisional enforcement conference:

ISSUE:

A. Preliminary Severity Level (Prior to Application of any Discretion, From Part I)

B. Increase Severity Level based on Aggregation?

C. Increase Severity Level for Repeat Violations? _____
(Address requirements of ROI 0903)

D. Increase Severity Level for Willfulness?

E. SEVERITY LEVEL _____ SUPPLEMENT/SECTION _____

F. Recommended Civil Penalty _____

G. Predecisional Enforcement Conference Necessary?

H. Revision to Draft NOV Required? _____

I. Formal Review by OE Required? _____

J. Special Action Items / Message to Licensee / Comments

[illegible]

Assessment



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Violation 1 with two examples.

10 CFR 50 Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," Criterion III requires, in part, that ... design control measures shall provide for verifying or checking the adequacy of design, such as the performance of design reviews... The verifying or checking process shall be performed by individuals or groups other than those who performed the original design, but who may be from the same organization.

FPL Topical Quality Assurance Report, TQR 3.0, revision 11, "Design Control," Section 3.2.4, "Design Verification," stated, in part, "Design control measures shall be established to independently verify design input... Design verification shall be performed by technically qualified individuals or groups other than those who performed the design.

Engineering Quality Instructions 1.7 "Design Input/Verification," rev. 1, dated July 5, 1995, states in part, "Design verification is the process whereby a competent individual, who has remained independent of the design process, reviews the design inputs, ... and design output to verify design adequacy.

Contrary to the above:

1. Design change (PC/M 009-195) was implemented without an independent design verification by a competent individual. Design change PC/M 009-195 to install new Gamma Metrics Nuclear Instrumentation drawers was completed by a lead designer and a lead engineer. Contrary to this requirement the first reviewer (a designer) could not be considered as competent because he was not an engineer as required by QI 1.7 and the lead engineer as the third reviewer could not be considered to have remained independent of this design project.
2. An adequate independent design verification was not conducted for the installation of a new core flux monitoring computer code BEACON. During initial operation of BEACON it was found that the code did not compensate for a core mid-plane offset created by a previous core modification. The engineer who prepared the design was not aware of the core mid-plane offset and the independent review of the new BEACON code did not identify this omission.

Violation 2 with two examples

Technical Specification 6.8, Procedures and Programs, paragraph 6.8.1 requires in part that written procedures recommended in Appendix A of Regulatory Guide 1.33 revision 2, February 1978, shall be established, implemented...

Administrative Procedure No. 0006130, Condition Reports, revision 4, dated March 22, 1996, Paragraph 8.1.1.A states in part that "Any individual who becomes aware of a problem or discrepant condition ... should initiate a CR. If doubt exists, a CR form should be initiated".

Engineering Quality Instruction (QI) 3.7, Computer Software Control, revision 1, Section

EEF/89



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5.4. requires that SQA1 software shall be validated and verified (V&V'ed) in accordance with Section 5.6. Section 5.6 states that new software shall be V&V'ed prior to use. V&V includes the use of test cases to ensure the new software produces correct results. Item 4 of Section 5.6 states that technical adequacy shall be determined by comparing the test case to results from alternative methods such as functionally equivalent and previously validated software.

Contrary to the above,

On July 30, 1996, Instrument and Control technicians installing a plant Design Change (PC/M 009-15) did not initiate a Condition Report when they became aware of a discrepant condition concerning incorrectly marked cables. They continued to install the modification and an error was made that resulted in cross-wiring of the nuclear instrumentation system.

BEACON was placed into service on Unit 1 without benchmarking against IMPAX, functionally equivalent and previously validated software.

(NOTE TO PANEL: This could be considered another example of inadequate PMT as identified in EA 95-187. V&V is the post-mod acceptance test for software.)

180

Poav

ENFORCEMENT ACTION WORKSHEET

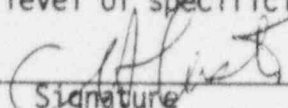
INADEQUATE DESIGN CONTROL

PREPARED BY: John W. York

DATE: October 28, 1996

NOTE: The Section Chief of the responsible Division is responsible for preparation of this EAW and its distribution to attendees prior to an Enforcement Panel. The Section Chief shall also be responsible for providing the meeting location and telephone bridge number to attendees via e-mail [ENF.GRP, CFE, OEMAIL, JXL, JRG, SHL, LFD; appropriate RII DRP, DRS; appropriate NRR, NMSS]. A Notice of Violation (without "boilerplate") which includes the recommended severity level for the violation is required. Copies of applicable Technical Specifications or license conditions cited in the Notice or other reference material needed to evaluate the proposed enforcement action are required to be enclosed.

This Notice has been reviewed by the Branch Chief or Division Director and each violation includes the appropriate level of specificity as to how and when the requirement was violated.


Signature

Facility: St. Lucie

Unit(s): 1 and 2

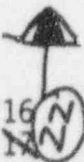
Docket Nos: 50-335, 389

License Nos: DPR-67, NPF-16

Inspection Report No: 96-14

Inspection Dates: 10/7-11, and 10/15-18, 1996

Lead Inspector: John York



1. **Brief Summary of Inspection Findings:** [Always include a short statement of the regulatory concern/violation. Reference and attach draft NOV. Then, either summarize the inspection findings in this section or reference and attach sections of the inspection report. Inspectors are encouraged to utilize the Noncompliance Information Checklist provided in Enclosure 4 to ensure that the information gathered to support the violation is complete.]

The licensee replaced some safety related nuclear instrumentation drawers during the Unit 1 Outage. The drawers were wired backwards because of incorrect drawings. Part of the root cause identified the lack of a proper independent verification as a potential cause. This is a violation of 10 CFR 50 Appendix B Criterion III. In examining the safety aspects of this event, one additional example of inadequate design verification was identified for BEACON on line core performance monitoring system.

In addition to the wiring problem for the drawers, the maintenance group connected the field cables for an NI backwards because the markings on the connectors were different than on the previous detectors. An NOV was written for failure to write a Condition Report (discrepancy report) and resolve this problem prior to installation of the detector.

See attached IR feeder and proposed NOV for details.

**PROPOSED ENFORCEMENT ACTION - NOT FOR PUBLIC DISCLOSURE
WITHOUT THE APPROVAL OF THE DIRECTOR, OE**

2. Analysis of Root Cause:

Lack of control and procedural adherence in the licensee's program for preparing and implementing Plant Change/Modifications (PC/Ms).

3. Basis for Severity Level (Safety Significance): [Include example from the supplements, aggregation, repetitiveness, willfulness, etc.]

Aggregation of examples and application of Supplement I, C.7, a breakdown in the control of licensed activities involving two violations that are related that collectively represent a potentially significant lack of attention toward licensed activities.

The safety significance of reversing the detector inputs to the NIS drawers substantially reduced the safety margin between the TM/LP trip setpoint and the analysis limit even considering the increased TM/LP margin to the trip setpoint due to actual core operating conditions.

4. Identify Previous Escalated Action Within 2 Years or 2 Inspections?
[by EA#, Supplement, and Identification date.]

EA 96-249 - Inadequate 50.59 did not identify USQ, 7/12/96

EA 96-040 - Boron Overdilution Event, Supplement 1, 1/22/96

EA 95-180 - Inoperable PORVs due to Inadequate PMT, Supplement 1, 8/4/95

5. Identification Credit? No

The miswired NI drawers were identified through an event (the failure to have the system respond properly), i. e. the analysis of the data by Reactor Engineering discovered the miswiring of the NI drawers but the error in the drawing should have been discovered in the design control process.

The design error associated with BEACON was identified through routine comparisons of actual plant data with predicted data. This error could have been discovered in the design control process.

Enter date Licensee was aware of issues requiring corrective action:
7/30/96

6. Corrective Action Credit? Yes

Brief summary of corrective actions:

In response to the issue, the licensee adopted corrective actions which included:

- For immediate action the licensee prepared a change request for the modification package and channels A.C. and D were reconnected and testing was performed to verify proper NI response.
- A root cause/self assessment and training meeting for the Engineering Department emphasizing importance of proper design

verification and importance of questioning attitude. Tape was produced of this meeting for future engineering training.

- Procedures (Engineering Quality Instructions) were revised to (1) require all critical aspects be verified during the PC/M, (2) emphasize that the same level of verification is required for PC/Ms duplicated for the second unit, and (3) reinforce the verification requirements for safety related drawings.
- Walkdowns will be conducted (linear NIs) to revise any design documentation and tagging.
- ASI targets will be established for future trending of ASI during power ascension.
- Require cross-disciplinary reviews of design inputs
- Better documentation of assumptions in core design inputs and codes

Explain application of corrective action credit:

Corrective action appears to be of appropriate scope.

7. Candidate For Discretion? NO

Explain basis for discretion consideration:

Since actual power conditions did not exceed trip setpoints, no escalation is warranted. Several examples of licensee's declining performance in engineering does not warrant mitigation.

8. Is A Predecisional Enforcement Conference Necessary? Yes

Why:

To determine adequacy of licensee's proposed long-term corrective actions regarding backward looks at modifications performed prior to the Unit 1 outage. This included discussions of other modifications that may not have been independently verified.

If yes, should OE or OGC attend? [Enter Yes or No]:

Should conference be closed? [Enter Yes or No]:

9. Non-Routine Issues/Additional Information:

ENFORCEMENT ACTION
WORKSHEET

- 4 -

10. This Action is Consistent With the Following Action (or Enforcement Guidance) Previously Issued: [EICS to provide] [If inconsistent, include:]

Basis for Inconsistency With Previously Issued Actions (Guidance)

11. Regulatory Message:

Positive control must be established and maintained over the design process, with particular emphasis on properly performing independent design verification.

12. Recommended Enforcement Action:

SL III

13. This Case Meets the Criteria for a Delegated Case. [EICS - Enter Yes or No]

14. Should This Action Be Sent to OE For Full Review? [EICS - Enter Yes or No]

If yes why:

15. Regional Counsel Review [EICS to obtain]
No Legal Objection Dated:

16. Exempt from Timeliness: [EICS]
Basis for Exemption:

Enforcement Coordinator:
DATE:

ENFORCEMENT ACTION WORKSHEET - ISSUES TO CONSIDER FOR DISCRETION

- ☐ Problems categorized at Severity Level I or II.
- ☐ Case involves overexposure or release of radiological material in excess of NRC requirements.
- ☐ Case involves particularly poor licensee performance.
- ☐ Case (may) involve willfulness. Information should be included to address whether or not the region has had discussions with OI regarding the case, whether or not the matter has been formally referred to OI, and whether or not OI intends to initiate an investigation. A description, as applicable, of the facts and circumstances that address the aspects of negligence, careless disregard, willfulness, and/or management involvement should also be included.
- ☐ Current violation is directly repetitive of an earlier violation.
- ☐ Excessive duration of a problem resulted in a substantial increase in risk.
- ☐ Licensee made a conscious decision to be in noncompliance in order to obtain an economic benefit.
- ☐ Cases involves the loss of a source. (Note whether the licensee self-identified and reported the loss to the NRC.)
- ☐ Licensee's sustained performance has been particularly good.
- ☐ Discretion should be exercised by escalating or mitigating to ensure that the proposed civil penalty reflects the NRC's concern regarding the violation at issue and that it conveys the appropriate message to the licensee. Explain.

**PROPOSED ENFORCEMENT ACTION - NOT FOR PUBLIC DISCLOSURE
WITHOUT THE APPROVAL OF THE DIRECTOR, OE**

Enclosure 3

REFERENCE DOCUMENT CHECKLIST

- ☐ NRC Inspection Report or other documentation of the case:
NRC Inspection Report Nos.:
- ☐ Licensee reports:
- ☐ Applicable Tech Specs along with bases:
- ☐ Applicable license conditions
- ☐ Applicable licensee procedures or extracts
- ☐ Copy of discrepant licensee documentation referred to in citations such as NRC, inspection record, or test results
- ☐ Extracts of pertinent FSAR or Updated FSAR sections for citations involving 10 CFR 50.59 or systems operability
- ☐ Referenced ORDERS or Confirmation of Action Letters
- ☐ Current SALP report summary and applicable report sections
- ☐ Other miscellaneous documents (List):

NI INSPECTION ST. LUCIE-October 7-18, 1996

On July 30, 1996, St. Lucie Unit 1 was operating at approximately 100 % power when reactor engineering was analyzing the data taken during power ascension and noted an anomaly in the results. The data indicated three of the four excore linear detectors measured core power moving to the top of the core during power ascension. This was an unexpected phenomena and did not agree with the trend of the power moving to the bottom of the core indicated by RPS Channel B Linear Range Detector, Control Channel #9 Linear Range Detector, and the BEACON Core Power Distribution Monitoring System. Evaluation of the data collected indicated that RPS Channels A,C, and D could have reversed (rolled) leads of the top and bottom chambers input to the RPS drawers.

The modification performed during the outage associated with this problem was No. PC/M 009-195. During the outage, the licensee replaced the power range NI drawers for the Reactor Protection System (RPS) with new Gamma Metrics drawers. This modification combined the linear power range input to the RPS and the logarithmic wide range channel into a single drawer, i.e. reduced the number of drawers on Unit 1 from eight to four. This modification increased the limits of the instruments range and replaced aging equipment.

Engineering Verification-Root Cause

A design error was responsible for the reverse connection (rolled leads) on four NI safety related drawers on Unit 1. The Controlled Wiring Diagram (CWD), no. JPN-009-195-001/002 depicted the upper Uncompensated Ion Chamber (UIC) connected to the lower UIC input at the NI drawer. The root cause noted that the designer and the lead engineer interpreted conflicting information on the existing CWDs and made an assumption.

The independent* verification may have caught this error had the process been properly performed. The drawings were prepared by the lead designer with input from the lead engineer. The drawings were then checked by a second designer who had no special knowledge of the NI design. This check was essentially a drafting check. The drawings were then reviewed by the lead designer and then by the engineering supervisor.

Engineering Quality Instructions (QI) 1.7, Design Input/Verification, dated July 5, 1995, states in part that "Design verification is the process whereby a competent individual, who has remained independent of the design process, reviews the design inputs, ... and design output to verify design adequacy. This independent review is provided to minimize the likelihood of design errors in items that are important to nuclear safety." Contrary to this requirement the first reviewer could not be considered as competent because he was not an engineer as required by

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QI 1.7 and the lead engineer as the third reviewer could not be considered to have remained independent of this design project.

One of the action items to prevent recurrence was to check all the I&C and electrical PC/M to see if all the drawing approval signatures could qualify as independent verifiers. The licensee found three out of eight open modifications where this was a potential problem, two of these modifications were electrical and one was I&C. This therefore is not an isolated case. This failure to perform independent verification according to procedure is identified as example one of violation 50-335/96-17-XX, Failure to Control the Design Process According to the Requirements of 10 CFR 50, Appendix B, Criterion III.

BEACON Core Power Distribution Monitoring System

The licensee had installed BEACON during this refueling outage to replace the older IMPAX code used for in-core flux monitoring. BEACON provided several significant improvements over IMPAX one being real-time flux profile monitoring. This improvement permitted reactor engineering to identify the NIS problem quickly and initiate prompt corrective actions.

During power operations, reactor engineering used BEACON to obtain the actual in-core flux profile. The actual in-core flux profile was then used to verify compliance with Technical Specifications and provide calibration information for the excore NIS drawers. As part of these routine surveillances, reactor engineering compares actual in-core flux profile to the in-core flux profile predicted by the core design code. Reactor engineering noted larger than normal errors between actual and predicted in-core flux profile. Because BEACON used the same neutronics engine as used in the core design code, reactor engineering could not explain the error and notified the corporate core design engineers. As part of the process to resolve these errors, it was discovered that a simplifying assumption, used to overcome limitations of the IMPAX, was not accounted for in the original design of BEACON. This simplifying assumption was used because the licensee had changed the fuel design to incorporate a longer end cap to prevent debris induced fuel failures. This longer end cap raised the overall core height by 2.64" causing an offset between detector midplane and actual core midplane. The IMPAX code assumed detector midplane was along core midplane and could not accommodate the 2.64" offset. Therefore, the licensee, after discussion with the fuel vendor (Siemens), used this simplifying assumption to essentially lower the core midplane by 2.64" so that final design output would be referenced to detector midplane; not core midplane. However, the engineer preparing the design input for BEACON was not aware of this simplifying assumption consequently BEACON was referenced to core midplane resulting in an increased error between the core design predicted in-core flux profile and actual in-core flux profile.

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The licensee's root cause evaluation identified lack of cross-discipline review as the significant contributor to this design error. The inspector concurred with the licensee's evaluation. Engineering Quality Instructions (QI) 1.7, Design Input/Verification, dated July 5, 1995, states in part that "Design verification is the process whereby a competent individual, who has remained independent of the design process, reviews the design inputs, ... and design output to verify design adequacy. This independent review is provided to minimize the likelihood of design errors in items that are important to nuclear safety." Contrary to this requirement, the design inputs were not adequately reviewed by a competent individual in that the core midplane offset was not identified as a design input for BEACON. This failure to perform an adequate independent design review for the BEACON system is identified as example two of violation 50-335/96-17-XX, Failure to Control the Design Process According to the Requirements of 10 CFR 50, Appendix B, Criterion III.

The safety significance of reversing the detector inputs to the NIS drawers substantially reduced the safety margin between the TM/LP trip setpoint and the analysis limit even considering the increased TM/LP margin to the trip setpoint due to actual core operating conditions. The safety impact of the failure to identify the core and detector midplane offset on TM/LP or LPD safety limits was minimal.

CONNECTOR SWAPS AT DETECTOR 6-CHANNEL B

All four of the RPS Linear Range Detectors had the connectors reversed as previously discussed but the B channel unlike the other three channels was giving the correct data. At the same time that the drawers were being replaced on Unit 1, the detector for channel B (detector no. 6) was being replaced as a maintenance activity. During connection of the field cables, the connections were reversed for the upper and lower detection chambers, thereby causing the B channel to record properly.

The root cause for the swap of the cables was that the new detector had different labeling than the existing cables. The existing cables were labeled TOP SIG and BOT SIG, and the new detector had A and B. The inspectors discussed this maintenance job with the I&C supervision who had supervised the latter part of this maintenance project. Several opportunities were presented to the maintenance personnel, one when the detectors were checked out in the warehouse and a second time when this condition was noted in the field.

Maintenance personnel should have resolved the labeling problem by writing a Condition Report (CR) and having a formal resolution. Administrative Procedure No. 0006130, Condition Reports, rev. 4, dated March 22, 1996, Par. 8.1.1.A states in part that "Any individual who becomes aware of a problem or discrepant condition ... should initiate a

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CR. If doubt exists, a CR form should be initiated". This failure to comply with the requirements of the administrative procedure is identified as violation 50-335/96-17-YY, Failure to Initiate a Condition Report for Labeling on Safety Related Detectors.

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Violation 1 with two examples.

10 CFR 50 Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," Criterion III requires, in part, that ... design control measures shall provide for verifying or checking the adequacy of design, such as the performance of design reviews...The verifying or checking process shall be performed by individuals or groups other than those who performed the original design, but who may be from the same organization.

FPL Topical Quality Assurance Report, TQR 3.0, revision 11, "Design Control," Section 3.2.4, "Design Verification," stated, in part, "Design control measures shall be established to independently verify design input...Design verification shall be performed by technically qualified individuals or groups other than those who performed the design.

Engineering Quality Instructions 1.7 "Design Input/Verification," rev.1, dated July 5, 1995, states in part, "Design verification is the process whereby a competent individual, who has remained independent of the design process, reviews the design inputs, ... and design output to verify design adequacy.

Contrary to the above:

1. ~~Contrary to the above~~, on July 30, 1996, it was discovered that a design change (PC/M 009-195) was completed without an independent design verification by a competent individual. Design change PC/M 009-195 to install new Gamma Metrics Nuclear Instrumentation drawers was completed by a lead designer and a lead engineer. This design change was independently verified by a second designer who had no special knowledge of the design. A engineering supervisor approved the design. Neither the second designer or engineering supervisor had remained independent of the design process.
2. ~~Contrary to the above~~, on July 30, 1996, it was discovered that an independent design review was not conducted for the installation of a new core flux monitoring computer code BEACON. During initial operation of BEACON it was found that the code did not compensate for a core mid-plane offset created by a previous core modification. The engineer who prepared the design was not aware of the core mid-plane offset and the independent review of the new BEACON code did not identify this omission.

56 III 2 examples
Violation 2

Technical Specification 6.8, Procedures and Programs, paragraph 6.8.1 requires in part that written procedures recommended in Appendix A of Regulatory Guide 1.33 revision 2, February 1978, shall be established, implemented...

**PROPOSED ENFORCEMENT ACTION - NOT FOR PUBLIC DISCLOSURE
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Administrative Procedure No. 0006130, Condition Reports, revision 4, dated March 22, 1996, Paragraph 8.1.1.A states in part that "Any individual who becomes aware of a problem or discrepant condition ... should initiate a CR.. If doubt exists, a CR form should be initiated".

Contrary to the above, on July 30, 1996, Instrument and Control technicians installing a plant design change (PC/M 009-15) did not initiate a condition report when they became aware of a discrepant condition concerning incorrectly marked cables. They continued to install the modification and an error was made that resulted in cross-wiring of the nuclear instrumentation system.

Qtd

SL

III

prob.

The licensee also identified that BEACON was placed into service on Unit 1 without any benchmarking against IMPAX, the on-line core performance monitoring code BEACON was replacing. Instead, BEACON was installed on Unit 2 and benchmarked against CECORE, which did not require any modifications to accommodate the core midplane offset. Engineering Quality Instruction (QI) 3.7, Computer Software Control, revision 1, Section 5.4, requires that SQA software shall be validated and verified (V&V'ed) in accordance with Section 5.6. Section 5.6 states that new software shall be V&V'ed prior to use. V&V includes the use of test cases to ensure the new software produces correct results. Item 4 of Section 5.6 states that technical adequacy shall be determined by comparing the test case to results from alternative methods such as functionally equivalent and previously validated software. In the case of BEACON, IMPAX would have been functionally equivalent software. Benchmarking BEACON against IMPAX may have identified the design error concerning core midplane offset because the two codes would not have yielded the same results. Contrary to this requirement, BEACON was placed into service on Unit 1 without benchmarking against IMPAX. This is a Severity Level VI violation.

NOTE TO PANEL: This could be considered another example of inadequate PMT as identified in EA 95-180. V&V is the post-mod acceptance test for software.



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Violation 1 with two examples.

10 CFR 50 Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," Criterion III requires, in part, that ... design control measures shall provide for verifying or checking the adequacy of design, such as the performance of design reviews... The verifying or checking process shall be performed by individuals or groups other than those who performed the original design, but who may be from the same organization.

FPL Topical Quality Assurance Report, TQR 3.0, revision 11, "Design Control," Section 3.2.4, "Design Verification," stated, in part, "Design control measures shall be established to independently verify design input... Design verification shall be performed by technically qualified individuals or groups other than those who performed the design.

Engineering Quality Instructions 1.7 "Design Input/Verification," rev. 1, dated July 5, 1995, states in part, "Design verification is the process whereby a competent individual, who has remained independent of the design process, reviews the design inputs, ... and design output to verify design adequacy.

Contrary to the above: III

1. Design change (PC/M 009-195) was implemented without an independent design verification by a competent individual. Design change PC/M 009-195 to install new Gamma Metrics Nuclear Instrumentation drawers was completed by a lead designer and a lead engineer. Contrary to this requirement the first reviewer (a designer) could not be considered as competent because he was not an engineer as required by QI 1.7 and the lead engineer as the third reviewer could not be considered to have remained independent of this design project.
2. An adequate independent design verification was not conducted for the installation of a new core flux monitoring computer code BEACON. During initial operation of BEACON it was found that the code did not compensate for a core mid-plane offset created by a previous core modification. The engineer who prepared the design was not aware of the core mid-plane offset and the independent review of the new BEACON code did not identify this omission.

Violation 2 with two examples 7

Technical Specification 6.8, Procedures and Programs, paragraph 6.8.1 requires in part that written procedures recommended in Appendix A of Regulatory Guide 1.33 revision 2, February 1978, shall be established, implemented...

Administrative Procedure No. 0006130, Condition Reports, revision 4, dated March 22, 1996, Paragraph 8.1.1.A states in part that "Any individual who becomes aware of a problem or discrepant condition ... should initiate a CR. If doubt exists, a CR form should be initiated".

Engineering Quality Instruction (QI) 3.7, Computer Software Control, revision 1, Section



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5.4. requires that SQA1 software shall be validated and verified (V&V'ed) in accordance with Section 5.6. Section 5.6 states that new software shall be V&V'ed prior to use. V&V includes the use of test cases to ensure the new software produces correct results. Item 4 of Section 5.6 states that technical adequacy shall be determined by comparing the test case to results from alternative methods such as functionally equivalent and previously validated software.

Contrary to the above,

On July 30, 1996, Instrument and Control technicians installing a plant Design Change (PC/M 009-15) did not initiate a Condition Report when they became aware of a discrepant condition concerning incorrectly marked cables. They continued to install the modification and an error was made that resulted in cross-wiring of the nuclear instrumentation system.

BEACON was placed into service on Unit 1 without benchmarking against IMPAX, functionally equivalent and previously validated software.
(NOTE TO PANEL: This could be considered another example of inadequate PMT as identified in EA 95-182. &V is the post-mod acceptance test for software.)

EICS ENFORCEMENT WORKSHEET EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

EA NUMBER: 96-457 (CLOSED)

FACILITY: ST. LUCIE

SUBJECT: NI

ATTENDEES

BENHARDT	Lieberman *
JULIAN	Satorious *
URYC	TZAPP
Netschoff	York *
Casto	Mark Miller *
Watson	Werner *

☒ PANEL ☐ PEC ☐ CAUCUS☒ OTHER ☐ OI BRIEF

TZEPANEL

INSPECTION END DATE: 10-18-96

(* VIA TELEPHONE)

PREPARED BY: URYC

DATE: 110696 TIME: 1420

I. EICS STAFF NOTES:

lic used 1/2 drawings for LI and they were different -

Nuc instrumentation leads reversed

ILC - modification pkg

Safety issue - safety conservatism reduced

4 ch excore - 3 were wrong

inconsistencies started at ~35% power -

Continued upward in power ascension to 100%

ch B indicating positive flux, ACD indicating negative flux

no requirement to monitor

110696
1420

probably should have stopped work when all the problems developing on the mod package

Re Panel needed
11-06-96

EEE/90

ENFORCEMENT ACTION WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

msg - poor design modification

II. Civil Penalty Assessment

A. First non-willful SL III violation in 2 years/2 inspections? YES or NO

Previous escalated cases:

B. Identification Credit? YES - NO - N/A

NRC identified?

Licensee identified?

Revealed through an event?*

Prior opportunities? *QA discrepancies (8 findings, +50 deviations)
 field people found deviations, 13 copying changes*

C. Corrective action credit? YES - NO - N/A ?

Immediate corrective actions:

Long term corrective actions to prevent recurrence:

D. Discretion applied? Yes or No: Reason why.

E. Civil Penalty: _____

F. Recommendation & predecisional enforcement conference:

*offer Cit 16 or on
 non appointment v10
 to get lic to
 disc at PEC*

ISSUE:

A. Preliminary Severity Level (Prior to Application of any Discretion, From Part I) _____

B. Increase Severity Level based on Aggregation?_____

C. Increase Severity Level for Repeat Violations? _____
(Address requirements of ROI 0903)

D. Increase Severity Level for Willfulness?

E. SEVERITY LEVEL III SUPPLEMENT/SECTION I, C, 4

F. Recommended Civil Penalty_____

G. Predecisional Enforcement Conference Necessary? _____

H. Revision to Draft NOV Required? _____

1. Formal Review by OE Required? _____

J. Special Action Items / Message to Licensee / Comments

[illegible]

Risk very low (R. Benhardt)

CE concerned about weaknesses in work practices,

VIO 1 - R22 proposed SCL3
2 - " " SCL4

Sup. I. C. 4 - Reduction in margin
of safety

ACTION

3 apparent vios -

1)

2) Crit 3

3) Crit 16 - dual verification

EICS ENFORCEMENT WORKSHEET

EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

EA NUMBER: _____

FACILITY: St Lucie

SUBJECT: NI

ATTENDEES

<u>Fredrickson</u>	<u>Holton</u>
<u>Cato</u>	<u>Gibson</u>
<u>Boland</u>	<u>Watson</u>
<u>Urge</u>	<u>Campbell</u>
<u>Miller</u>	_____
<u>Julian</u>	_____
<u>Merschhoff</u>	_____

☐ PANEL ☐ PEC ☒ CAUCUS

☐ OTHER ☐ OI BRIEF

Joint caucus for Security, EP, NI

INSPECTION END DATE: _____

PREPARED BY: J. Watson

DATE: 12/10/96 TIME: 1 PM

I. EICS STAFF NOTES:

Discussion of panel outcome. Discussion of similarity to Calvert Cliffs issue - CC issue was just a portion of St. Lucie

Viol A - rewrite Viol A Ex 2 to discuss IV of modeling

Viol B - Will be dropped - requirement not specific enough to cite for IMPAX benchmarking as Proc allowed other methods discuss about missing core plane offset covered in Viol A.2.

Viol C - Discussed whether or not there was a programming problem No Concluded SL III

bot non-willful - No ID Credit Yes Discussed license ID is event. Not an event QA Credit Yes

Message: Concerned with deficient design control over in drawing lack of indep review failed to have under technical

* VIA TELEPHONE

EEH 91

ENFORCEMENT ACTION WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

II. Civil Penalty Assessment

A. First non-willful SL III violation in 2 years/2 inspections? YES or NO

Previous escalated cases:

B. Identification Credit? YES - NO - N/A

NRC identified?

Licensee identified?

Revealed through an event?*

Prior opportunities?

C. Corrective action credit? YES - NO - N/A

Immediate corrective actions:

Long term corrective actions to prevent recurrence:

D. Discretion applied? Yes or No: Reason why.

E. Civil Penalty: _____

F. Recommendation for predecisional enforcement conference:

ENFORCEMENT ACTION WORKSHEET EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

NOTE: Complete the following information for each violation

ISSUE:

III. Documentation of Enforcement Panel/Caucus Consensus

- A. Preliminary Severity Level (Prior to Application of any Discretion, From Part I) _____
- B. Increase Severity Level based on Aggregation? _____
- C. Increase Severity Level for Repeat Violations? _____
(Address requirements of ROI 0903)
- D. Increase Severity Level for Willfulness? _____
- E. SEVERITY LEVEL _____ SUPPLEMENT/SECTION _____
- F. Recommended Civil Penalty _____
- G. Predecisional Enforcement Conference Necessary? _____
- H. Revision to Draft NOV Required? _____
- I. Formal Review by OE Required? _____
- J. Special Action Items / Message to Licensee / Comments

manual available failure to take opportunity to
benchmark

system of fundamentally importance entire system
at once ^{important to} take extra precautions to ensure proper
installation

EICS ENFORCEMENT WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

EA NUMBER: _____

ATTENDEES

FACILITY: St Lucie

See attendance list

SUBJECT: NI

☐ PANEL ☒ PEC ☐ CAUCUS

☐ OTHER ☐ OI BRIEF

Joint transcribed PEC
on three issues: Security, EP, NIs

INSPECTION END DATE: _____

PREPARED BY: LJ Watson

DATE: 12/10/96 TIME: 8 AM

I. EICS STAFF NOTES:

Ortega: Introduction

Gibson: Ref. NI issue

Three vols per slide

Scorbo: NI was a high maintenance item. Completed installation and testing in Jan. 96. Individuals had incorrect mind set during verification activities. At St Lucie detectors actually hang upside down. No markings or connectors so relying on cable TPs. Assignment of connectors from NIs to detectors was in error. No PWT to verify wiring connections. During startup, axial shape index trending did not identify. Operators questioned difference and NIs were adjusted. An original CR was dispositioned by a 13% power test. Problem identified while verifying startup data.

Discussed root cause, drawing generated by a designer, reviewed by a designer not an engineer. Licensee concluded that design was inadequately verified.

Discussed corrective actions.

* VIA TELEPHONE

EEE/92

ENFORCEMENT ACTION WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

II. Civil Penalty Assessment

A. First non-willful SL III violation in 2 years/2 inspections? YES or NO

Previous escalated cases:

B. Identification Credit? YES - NO - N/A

NRC identified?

Licensee identified?

Revealed through an event?*

Prior opportunities?

C. Corrective action credit? YES - NO - N/A

Immediate corrective actions:

Long term corrective actions to prevent recurrence:

D. Discretion applied? Yes or No: Reason why.

E. Civil Penalty: _____

F. Recommendation for predecisional enforcement conference:

ISSUE:

A. Preliminary Severity Level (Prior to Application of any Discretion, From Part I)

B. Increase Severity Level based on Aggregation?

C. Increase Severity Level for Repeat Violations? _____
(Address requirements of ROI 0903)

D. Increase Severity Level for Willfulness? _____

E. SEVERITY LEVEL _____ SUPPLEMENT/SECTION _____

F. Recommended Civil Penalty _____

G. Predecisional Enforcement Conference Necessary?

H. Revision to Draft NOV Required? _____

I. Formal Review by OE Required? _____

J. Special Action Items / Message to Licensee / Comments

[illegible]

CE changed the configuration to combine wide & sk range drawers. Mod made to UI to combine.

UI drawings were incorrect - Labelling, i.e. top signal is actually for physically bottom detector, is a human factors problem.

Clear

Gibson: Extent of problem not ~~clear~~ with regard to IV. Why only review mods made during this outage.

Process has been same for some time but no additional problems were noted in mods reviewed.

St Lucie engineering staff size has increased so IV problems not attributed to downsizing.

Safety Significance

Viol 1 Ex 2: Licensee considered software testing to be OK IV OK. Core midplane info fed into Beacon correct.

Mid plane adjustment was taken into account in safety analysis. ~~Core~~ output to Beacon did not address safety analysis adjustment. Error in modeling relationship back to safety analysis.

Viol 2: Did not benchmark

Licensee believed that combined worst case was still within safety margins (considered both reversed wiring and core plane offset issue.)

Viol 3: Agreed OK should have been issued.

EICS ENFORCEMENT WORKSHEET

EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

EA NUMBER: 96-457

FACILITY: St Lucie

SUBJECT: NI

ATTENDEES

<u>Elmstrom</u>	<u>Jandora</u>
<u>Gibson</u>	<u>Watson</u>
<u>Costo</u>	<u>Wage</u>
<u>Friedrichson</u>	<u>Menschoff</u>
<u>Julian</u>	<u>Barr</u>
<u>Stratton</u>	<u>Reyes</u>
<u>Orona</u>	<u>Campbell</u>

☐ PANEL ☐ PEC ☐ CAUCUS

☒ OTHER ☐ OI BRIEF LA brief for 12/10 PEC

INSPECTION END DATE: 10/18/96 96-17

PREPARED BY: _____

DATE: 12/9/96 TIME: 10 AM

I. EICS STAFF NOTES:

Costo briefed on facts of case. Previous computer prog
compensated for one mid plane shift; this one did not.
inadequate IV for design - Viol A; Viol B inadequate
IV for installation Viol C FTF proc. installation of
design change.

DRP to check attendance at PEC to see if Engineering
mgmt will attend

* VIA TELEPHONE

EEE/93

ENFORCEMENT ACTION WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

II. Civil Penalty Assessment

A. First non-willful SL III violation in 2 years/2 inspections? YES or NO

Previous escalated cases:

B. Identification Credit? YES - NO - N/A

NRC identified?

Licensee identified?

Revealed through an event?*

Prior opportunities?

C. Corrective action credit? YES - NO - N/A

Immediate corrective actions:

Long term corrective actions to prevent recurrence:

D. Discretion applied? Yes or No: Reason why.

E. Civil Penalty: _____

F. Recommendation for predecisional enforcement conference:

ISSUE:

A. Preliminary Severity Level (Prior to Application of any Discretion, From Part I)

B. Increase Severity Level based on Aggregation?

C. Increase Severity Level for Repeat Violations? _____
(Address requirements of ROI 0903)

2. Increase Severity Level for Willfulness?

E. SEVERITY LEVEL _____ SUPPLEMENT/SECTION _____

F. Recommended Civil Penalty

G. Predecisional Enforcement Conference Necessary?

H. Revision to Draft NOV Required? _____

I. Formal Review by OE Required?

J. Special Action Items / Message to Licensee / Comments

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EICS ENFORCEMENT WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

EA NUMBER: 96-457

FACILITY: St Lucie

SUBJECT: NI

ATTENDEES

<u>Watson</u>	<u>Silberman</u>
<u>Casto</u>	<u>Miller</u>
<u>Menschaff</u>	<u>York</u>
<u>Wings</u>	<u>Rapp</u>
<u>Fulmer</u>	
<u>Bernhardt</u>	
<u>Sartorius</u>	

☒ PANEL ☐ PEC ☐ CAUCUS

☐ OTHER ☐ OI BRIEF

INSPECTION END DATE: 10/18/96 (96-17)

PREPARED BY: AJ Watson

DATE: 11/06/96 TIME: 2:20 PM

I. EICS STAFF NOTES:

DNS (Casto) presented circumstances / proposed viol per EAH.
4 channels in core - 3 wrong TMLP Thermal margin
low pressure - protect against peak clad temp / DNB -
high power trip

Beacon imports mid-plane correlation to NI. Adjust
TMLP based on Beacon output. changes DNB output
(trip points input in error). Limit is end-of-core
life condition design feature. Found within a
day or two of error. Actual risk under actual
operating conditions was low.

Can't test mod until critical inconsistencies
showed up ~ 30% power. Lissac noticed this.
The only channel that was giving correct reading
was one they had replaced so they wanted to
calibrate new NI. Continued w/power escalation
to 100% power. Lissac did not see a clear

* VIA TELEPHONE

EEG 94

ENFORCEMENT ACTION WORKSHEET EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

II. Civil Penalty Assessment

A. First non-willful SL III violation in 2 years/2 inspections? ~~YES~~ or NO

Previous escalated cases:

B. Identification Credit? YES - NO - N/A

NRC identified?

Licensee identified? *Licensee found it*

Revealed through an event? *Was to an extent self-disclosing in that nature. Finally showed sig discrepancy. (Some after the mod.)*

Prior opportunities? *Lot of QA findings on mod plog. PRT didn't find it. It had it at 30% power and continued power excursion. QA finding on failure to meet field condition. Operators raised questions*

C. Corrective action credit? YES - NO - N/A

Immediate corrective actions: *Had good root cause evaluation.*

Long term corrective actions to prevent recurrence:

D. Discretion applied? Yes or No Reason why.

E. Civil Penalty: _____

F. Recommendation for predecisional enforcement conference:

Yes

ENFORCEMENT ACTION WORKSHEET **EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING**

NOTE: Complete the following information for each violation

ISSUE:

III. Documentation of Enforcement Panel/Caucus Consensus

- A. Preliminary Severity Level (Prior to Application of any Discretion, From Part I) III Prob
- B. Increase Severity Level based on Aggregation? No
- C. Increase Severity Level for Repeat Violations? No
(Address requirements of ROI 0903)
- D. Increase Severity Level for Willfulness? No
- E. SEVERITY LEVEL III SUPPLEMENT/SECTION I.C.4
- F. Recommended Civil Penalty No
- G. Predecisional Enforcement Conference Necessary? Yes
- H. Revision to Draft NOV Required? Yes
- I. Formal Review by OE Required? No
- J. Special Action Items / Message to Licensee / Comments

indication to licensee to hold power, at 30%
Ch B was indicating positive flux; rest ^{all} indicating
negative flux relative to coil mid plane. Flux
should have been flat. Relative values (i.e. difference)
was small. No requirement to trend. Got to 100%
power - 5 hours - before they discovered it. Took
less than 1 hour to fix.

Should there have been IVd for lead termination? Yes actual
installation was per instruction. Design change was
inadequate because leads were reversed.

(CE)

P:\FORMS.D\KEMFAPMEL.FRM / October 11, 1996

Vending had Post Mod test that would have shown error but had not told St Lucie.

Q. Was post mod test reasonable w/ what STR knew?

Calvert Cliffs reviewed leads. Resident inspector at CC said a NCV issued. Only issue @ CC was rolled leads.

Roller leads issue (Vid B) is proposed as SL IV

Risk assessment - Increase in risk very low given time in one lead.

Each drawer has own trip calculator and generator 2 of 4 trip.

CE concerned about weaknesses in design process. RII agrees.

Vid A proposed as SL III. Vid B proposed as SL IV. Propose choice ltr to licensee. Only issue that may be developed in PEC would be extent of conditions.

Other examples of problems - SFP cooling, annunciator response reflected old design. Current issues - mods made and didn't change ^{that} equipment data base.

Vid A fits Supp I.C.4 changes in reactor parameters that cause unanticipated reductions in margins of safety. Failure to identify problems earlier proposed as separate violation of Reg B Cit XVI. i.e. QA finding, mod supp chg.

PEC proposed due to prior to opportunities

5
*

Discussion of last issue
doesn't fit as repeat

95-180 issued August 95

Final Four apparent viola

Three to be SL III problem potentially

1. Out XVI

← 12/9 Decided not to issue as
apparent viol - See email note.

2. Out III

3. Dual viol on design

HH violation - potential IV

FTF procedure on implementation - maintenance

ISSUE:

A. Preliminary Severity Level (Prior to Application of any Discretion,
From Part I)

B. Increase Severity Level based on Aggregation? _____

C. Increase Severity Level for Repeat Violations? _____
(Address requirements of ROI 0903)

D. Increase Severity Level for Willfulness? _____

E. SEVERITY LEVEL _____ SUPPLEMENT/SECTION _____

F. Recommended Civil Penalty

G. Predecisional Enforcement Conference Necessary? _____

H. Revision to Draft NOV Required? _____

I. Formal Review by OE Required? _____

J. Special Action Items / Message to Licensee / Comments

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EICS ENFORCEMENT WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

96 EWM



EA NUMBER: EA 96-457

FACILITY: ST. LUCIE

SUBJECT: NI

ATTENDEES

<u>Watson</u>	<u>Wye</u>
<u>Gibson</u>	<u>Trapp</u>
<u>Heddon</u>	<u>Corbo</u>
<u>Evans</u>	
<u>Murphy</u>	
<u>Jelison</u>	
<u>Miller</u>	

☐ PANEL ☐ PEC ☒ CAUCUS

☐ OTHER ☐ OI BRIEF

INSPECTION END DATE: _____

(* VIA TELEPHONE)

PREPARED BY: Wye

DATE: 121096 TIME: 1430

I. EICS STAFF NOTES:

disc Vio A Beacon not safety-related

Example 2 - correct midplane offset issue -

delete Vio B - lic explained there was no
requirement and that they tested properly -

Vio C - SL4

Vio A - SL3 Sup

OE include

RA briefed 121096 by AFG/EWM → OK

OE - JXL/MAS briefed 121196 JG

EEF/95

ISSUE:

A. Initial Primary Severity Level (Prior to Application of any Discretion, Part I)

B. Increase Severity Level based on Aggregation?

C. Increase Severity Level for Repeat Violations? _____
(Address requirements of ROI 0903)

D. Increase Severity Level for Willfulness?

E. SEVERITY LEVEL _____ SUPPLEMENT/SECTION _____

F. Recommended Civil Penalty

G. Predecisional Enforcement Conference Necessary?

H. Revision to Draft NOV Required?

I. Formal Review by OE Required?

J. Special Action Items / Message to Licensee / Comments

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

Used PQM members for BEACON

QICN No. 7

QUALITY INSTRUCTION

CHANGE NOTICE (QICN)

APPROVAL

Chief - Engineering Assurance _____
Quality Assurance Dept (as req'd) N/A (see ** below)
VP - Nuc Engr and Lic (as req'd) _____

Date _____
Date _____
Date _____

DESCRIPTION OF CHANGE

This QICN adds additional Verification & Validation (V&V) guidance to ENG QI 3.1, "Computer Software Control". Section 5.8 of QI 3.7 requires that, as a minimum, V&V for revisions to pre-existing process software be done to the level of the original equipment. This QICN provides guidance for additional V&V tools that may be used based on the critical nature of some process software.

REASON FOR/INTENT OF CHANGE

In December, 1995 a failure of a revision to the R-11/R-12 radiation monitor firmware occurred. QI 3.7 requires that the V&V for revision be done to the original level of equipment as a minimum. Therefore, a rigorous V&V had not been performed on the revision. This QICN provides a reference to additional V&V tools that may be used in similar instances.

** This QICN does not change the intent of the procedure. Therefore, QA approval of this QICN is not required.


SPECIAL INSTRUCTIONS

1. Insert this QICN in front of QI(s) 3.7

ATTACHMENTS

Mark-ups of ENG QI 3.7 Pages 8 and 11 of 14 (2 pages).

EEE/96

	QUALITY INSTRUCTION	ENG-QI 3.7
	NUCLEAR ENGINEERING COMPUTER SOFTWARE CONTROL	REV. 1(QICN 7) DATE 4/29/96 (effective) PAGE 8 OF 14


process code, including ladder diagrams, ladder diagrams cross reference, and a detail design description. The SDD shall be reviewed for adequacy and feasibility (typically part of PC/M review process). The computer software being developed shall receive at least one design review covering the complete design as described in the SDD. The SDD shall be reviewed to ensure that it implements the SRS, and approved. The majority of the SDD may be from pre-existing vendor controlled documentation/spec sheet if it meets the criteria.

- 4) V&V shall be performed in accordance with Section 5.6.
- 5) User manuals (vendor manuals) shall be obtained or developed as required based on the complexity of the software.
- 6) Process software errors or defects shall be screened for potential 10CFR21 applicability/evaluation (see ENG QI 2.2).
- 7) Installation of new or revised process software must consider plant operation in all modes, as well as intermediate plant configurations during software installation.
- 8) Modifications to process software shall be accomplished using the applicable PC/M process. The 10CFR50.59 considerations shall be addressed as part of the PC/M. All affected documentation required by Section 6.0 shall be revised as required to reflect the software revision. See Section 5.6 for verification/validation requirements for revised software.
- 9) Process software changes that affect control room indication shall be duplicated in the control room simulator software.

5.6 Software Verification & Validation Plan and Report (SVVP and SVVR)

V&V of newly developed/revised computer software shall be completed prior to use. See section 5.8 for the requirements applicable to pre-existing software. V&V is a multi-faceted process that may include product in-process reviews, product evaluation and testing, process and product audits, process and algorithm analysis, anomaly detection and resolution, as well as other associated activities. V&V is modeled to follow the guidance of IEEE Std 1012, "Software Verification and Validation Plans". V&V planning must take into consideration such project characteristics as software criticality (including the software classification), safety and reliability requirements, schedule, resources, customer expectations, etc. Note that critical software as referred to in the standard applies to safety related process and SQA1 software only.

- 1) V&V results shall be reviewed by an independent individual other than the developer of the software.

	QUALITY INSTRUCTION	ENG-QI 3.7
	NUCLEAR ENGINEERING COMPUTER SOFTWARE CONTROL	REV. 1(QICN 7) DATE 4/29/96 (effective) PAGE 11 OF 14

5.8 Pre-Existing Software Requirements

Pre-existing non-process computer software is defined as software which was placed into a production environment prior to, and not modified since the implementation of FPL's software QA program (before 1990). Pre-existing computer software (purchased, developed, or otherwise obtained) which falls under the scope of this procedure shall be evaluated in order to justify continued use. Although the specific requirements for an SRS, SDD, SVVP, and SVVR need not be retrofitted to pre-existing software, periodic validation testing and verification testing for revisions to the software must be performed and controlled in accordance with this procedure. See Section 5.6. Form 136 (or equivalent) shall be prepared for all pre-existing computer software within the scope of this procedure, and submitted to NIS for inclusion in the CSI. Revisions to pre-existing non-process software shall meet the current requirements of the applicable SQA level.

Revisions to pre-existing process software shall be purchased such that V&V is performed to the level of the original equipment, as a minimum. In some cases additional V&V activities may be warranted based on the critical nature of the process software. IEEE Standard 1012 can be used as a guide for additional V&V tools to be used in these instances. Additional assurance of proper operation can also be obtained by black box testing and/or site testing of functions on training equipment.

5.9 Software Configuration Requirements

Process software configuration is controlled via the PC/M process.


Non-process software configuration control shall be maintained via the CSI in accordance with Section 5.10. Newly developed, purchased, or revised software shall be identified to NIS via Form 136 (or equivalent). Additional guidance on software configuration control is provided in lower tier NIS working procedures.

Revisions to software may be required for the following reasons:

- discrepancies noted during validation
- discovery of software errors
- modifications or revisions in software requirements

The following steps are to be followed in performing software revisions:

- 1) All software revision/modification to be performed by NIS shall be initiated by an RFS. Details and guidance on the RFS process are provided in lower tier NIS working procedures.
- 2) Revisions to computer software shall be verified and processed in

	QUALITY INSTRUCTION	ENG-QI 3.7
	NUCLEAR ENGINEERING COMPUTER SOFTWARE CONTROL	REV. 1 DATE 7/5/95 (effective) PAGE 1 OF 14

1.0 APPROVAL

Approved by: _____ Date: _____

2.0 SCOPE

This instruction applies to all computer software that falls under the FPL Quality Assurance program. Specifically, this instruction applies to:

- Software which is used to support design, testing, acceptance, or operation of Safety Related or Quality Related items
- Software which is used to verify compliance with Technical Specifications
- Software which is used to determine/document compliance with Regulations

3.0 PURPOSE

The purpose of this instruction is to provide requirements and guidance for computer software control, including software development, procurement, verification and validation, maintenance, and configuration management.

4.0 ACCOUNTABILITIES

4.1 The Manager - Nuclear Information Services (NIS) is accountable for:


- ensuring implementation of an overall computer software control program (excluding process software)
- approving the purchase of computer software and related documentation (excluding process software)

4.2 The PSL and PTN Engineering Managers are accountable for ensuring that process software meets the requirements of this procedure.

NOTE: Process software is defined as software which directly controls the functional aspects (actuation/regulating/monitoring) of plant equipment.

4.3 Managers are accountable for ensuring compliance with this instruction and maintaining adequate interface with NIS and user groups.

4.4 Supervisors are accountable for approving software related activities and documentation as required by this instruction, and ensuring that

	QUALITY INSTRUCTION	ENG-QI 3.7
	NUCLEAR ENGINEERING COMPUTER SOFTWARE CONTROL	REV. 1 DATE 7/5/95 (effective) PAGE 2 OF 14

appropriate personnel receive training commensurate with the requirements of this instruction.

- 4.5 Engineers and Analysts are accountable for complying with the requirements of this instruction for software related activities and documentation.

5.0 INSTRUCTIONS

5.1 Software Control Process

Overall software control requires adequate control mechanisms in each of the following phases of the typical software life cycle:


- Requirements Phase
- Design Phase
- Test Phase
- Installation and Checkout Phase
- Operation and Maintenance Phase
- Retirement Phase

All software (excluding process software) procurement, development, and modification shall be coordinated with Nuclear Information Services (NIS). Regardless of the nature or application, all non-process software within the scope of this instruction falls under the general responsibility of NIS for screening, approval, access control, integration into existing networks/platforms, and incorporation into the Computer Software Index (CSI). Much of the detailed guidance for NIS support and processing is contained in lower tier NIS working procedures. The following sections provide control requirements and methods to address the software life cycle phases above.

5.2 Software Categories

The two basic software categories are process and non-process. Process software is software used in an automated process control system designed to actuate, regulate, and/or monitor plant systems subsystems or components on a real-time basis. Process software is classified and controlled under the PC/M process (See Section 5.5).

Non-process software is software used in the performance of calculations, data bases, indices, work flow processes etc. Non-process software is further broken down into four categories as listed below. Non-process software requirements are detailed in Section 5.4.

	QUALITY INSTRUCTION	ENG-QI 3.7
	NUCLEAR ENGINEERING COMPUTER SOFTWARE CONTROL	REV. 1 DATE 7/5/95 (effective) PAGE 3 OF 14

PC-1

(1) Software Quality Assurance Level 1 (SQA1)

Includes software which provides unique technical capabilities that are unavailable via alternate methods. Also includes complex databases such as expert systems that alter safety related data without verification. SQA1 software is treated like a "black box" and the output cannot be readily independently verified.

Examples: LOCADOSE, Finite Element Analysis Programs

(2) Software Quality Assurance Level 2 (SQA2)

Computational software used as a convenience and time saving tool. The software results are obtainable through alternative (but more time consuming) methods. This software category includes programs that perform simple or complex arithmetic operations and mathematical functions (e.g., solving of boolean algebra, statistical analysis, trigonometric functions). The output/results from SQA2 software can be obtained through alternate methods including bounding analysis, and alternate calculation.

Examples: CAFTA, PIPE-FLO

(3) Software Quality Assurance Level 3 (SQA3)

Software used to automate business processes, develop and maintain data bases. Safety related data contained in a SQA3 data base is not modified by the database software.

Examples: Passport, Request Processing System


(4) Software Quality Assurance Level 4 (SQA4)

Widely available commercial software used to produce spreadsheets, data bases, word processing, or to perform arithmetic functions. Based on widespread usage and acceptance, use of this software is analogous to other software tools such as Fortran, DOS, Basic, etc.


Examples: Excel, Access, WP

5.3 General Non-Process Software Requirements

- 1) Requests for new computer software shall be prepared using Form 135 (or equivalent) and submitted to NIS. After NIS processing, the requester shall be informed of whether the request was approved or rejected. Requests for software modification/development shall be prepared using a Request for Service (RFS) and submitted to NIS or via an equivalent on-line system. Guidance for RFS processing is provided in lower tier NIS working procedures.

	QUALITY INSTRUCTION	ENG-QI 3.7
	NUCLEAR ENGINEERING COMPUTER SOFTWARE CONTROL	REV. 1 DATE 7/5/95 (effective) PAGE 4 OF 14

- 2) NIS should install PC software on the requestor's/developer's Local Area Network (LAN) Server or workstation. Otherwise, NIS shall distribute a "working" copy of PC software to requestors/developers who shall in turn submit Form 136 to NIS as input to the CSI.
- 3) Access to computer software shall be controlled to ensure protection against unauthorized access. Network/mainframe software control shall include log-on passwords. Additional guidance on software security is provided in lower tier NIS working procedures.
- 4) Technical assistance, for users experiencing software problems/anomalies, can be requested from NIS using Form 138 or equivalent (e.g., an RFS or Form 135).
- 5) Computer software shall be handled under the same Problem Reporting, Non-Conformance, Corrective Action, and Substantial Safety Hazard requirements as hardware, using the applicable instructions.
- 6) All users shall comply with software license agreements related to their specific software, including terms and conditions pertaining to duplication, disclosure, and confidentiality.
- 7) Software users shall be trained as necessary on computer software. The necessity and extent of training is at the discretion of immediate supervision and department management.
- 8) Retirement of computer software from the production environment shall be indicated to NIS via Form 136 (or equivalent).
- 9) NIS personnel receiving notification from Computer Operations (CPO) of a significant proposed system change shall assess the impact of the change on their application(s) and respond as requested by CPO.
- 10) All production software and data shall have current backups. When possible, these backups shall be physically separate from the production software and data.
- 11) Pre-existing software is exempt from certain requirements (see Section 5.8).
- 12) A Computer Software Index (CSI) shall be maintained by NIS and include a listing of all software within the scope of this instruction, excluding process software (see Section 5.10).
- 13) A package which includes all documents applicable to the software shall be assembled and retained as specified in Section 6.0.
- 14) User manuals/documentation should specify and describe required data, input, options, limitations, and other key information. Error

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messages should be identified with required response actions.

5.4 Non-Process Software Development/Purchase/Control Requirements

SQA1

- 1) A Software Requirements Specification (SRS) shall be prepared which identifies and describes the function, performance, constraints, attributes, external interfaces, and user documentation requirements of the computer software. SRS requirements should be capable of being objectively verified. The SRS shall be reviewed to ensure adequacy and feasibility, and approved. The procurement documents, if applicable, may constitute the majority of the SRS if they meet the criteria.
- 2) A Software Design Description (SDD) shall be prepared which identifies and describes the functions, components, and subcomponents of the software design, specific hardware requirements, interfaces, data sources, and how the SRS requirements will be implemented. The computer software being developed shall receive at least one design review covering the complete design as described in the SDD. The SDD shall be reviewed to ensure that it implements the SRS, and approved. The majority of the SDD may be from pre-existing vendor controlled documentation/spec sheet if it meets the criteria.
- 3) V&V shall be performed in accordance with Section 5.6. The V&V for purchased SQA1 should be performed by the vendor when feasible. If the vendor is unable perform the V&V, then it may be performed by FPL. All discrepancies revealed during validation/verification of the software shall be resolved by the **vendor** prior to delivery/use of the computer software unless otherwise stated by the procurement documentation.
- 4) If possible, SQA1 software should be purchased as PC-1 from a qualified vendor. If necessary, software which is not developed under an approved nuclear QA program may be purchased for SQA1 applications as PC-2. The required validation and verification activities shall be performed in accordance with Section 5.6. FPL assumes 10CFR21 responsibility for dedicated software.

The vendor shall be required in the purchase order to notify QA of any problems/errors subsequently revealed in the supplied software. If the software vendor is unable to support error notification, FPL shall perform a documented evaluation to determine the appropriate compensatory measures to be taken. The evaluation shall consider: (1) the degree of FPL and industry experience with the software, (2) the level of testing and benchmarking that the application has and will receive, (3) the extent to which the software is being

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modified or has been modified. Compensatory measures may include additional benchmarking and testing.

The purchase order shall require the **vendor** for purchased software to provide User Documentation as required based on the complexity of the software.


- 5) Disposition of software error notices shall include a review for potential 10CFR21 applicability/evaluation (see IP 801/803 and ENG QI 2.2).

SQA2

- 1) Requirements 1 through 3 for SQA1 software shall also be required for SQA2 software. However, the documentation of these requirements is not required to be as rigorous as for SQA1 software. SQA2 software is not considered critical software as described in IEEE Std 1012 and has fewer mandatory aspects to the V&V.
- 2) Software error notification, if received, should be reviewed for potential applicability and appropriate action. However, because the output from SQA2 software used in safety or quality related applications is independently verified, any errors that may be discovered would not be capable of resulting in substantial safety hazard. Therefore part 21 applicability has been generically screened out for SQA2 software.
- 3) SQA2 software shall be procured as PC-3 as a minimum. Vendor error notification is not required, but will be reviewed if provided.

SQA3

- 1) Requirements 1 through 3 for SQA1 software shall also be required for SQA3 software. However, the documentation of these requirements is not required to be as rigorous as for SQA1 software. SQA3 software is not considered critical software as described in IEEE Std 1012 and has fewer mandatory aspects to the V&V.
- 2) Software error notification, if received, should be reviewed for potential applicability and appropriate action. However, because the data from SQA3 software is controlled under the QA program and the software does not modify the data, any software errors would not be capable of resulting in substantial safety hazard. Therefore, part 21 applicability has been generically screened out for SQA3 software.
- 3) SQA3 software shall be procured as PC-3 as a minimum. Vendor error

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notification is not required, but will be reviewed if provided.

SQA4

1) The acceptability of SQA4 software is based on universal commercial acceptance and extensive use by a large and diverse population. There are no additional requirements on this software, so long as its use is within the normal intended bounds for the application.

2) SQA4 software is commercially available and should be procured PC-4.

Note: Although software categorized as SQA4 does not require any additional controls under this instruction, the specific usage may fall under another aspect of the FPL QA program.

(a) For example, spreadsheet applications used in design are subject to the design input and verification requirements of QI 1.7.

(b) Other applications created using SQA4 software shall be controlled as SQA1, SQA2 or SQA3 software as appropriate.


5.5 Process Software Requirements

Process software shall meet the applicable general requirements of this instruction, as well as the following specific requirements.

1) The implementation of process software shall be considered a PC/M in accordance with the requirements of ENG QI 1.0. The requirements of this instruction are in addition to the requirements of the applicable PC/M process (EP or MEP). Additional required documentation shall be attached to, or referenced in, the PC/M.

2) A Software Requirements Specification (SRS) shall be prepared which identifies and describes the function, performance, constraints, attributes, external interfaces, and user manual requirements of the computer software. SRS requirements should be capable of being objectively verified. The SRS shall be reviewed to ensure adequacy and feasibility, and approved. The procurement documents, if applicable, may constitute the majority of the SRS if they meet the criteria.

3) A Software Design Description (SDD) shall be prepared which identifies and describes the functions, components, and subcomponents of the software design, specific hardware requirements, interfaces, data sources, and how the SRS requirements will be implemented. The SDD shall include Detail Logic Diagrams (DLD) or other documentation as appropriate to the proposed software. The SDD shall also include the information necessary to represent the translation of the design requirements to the actual

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process code, including ladder diagrams, ladder diagrams cross reference, and a detail design description. The SDD shall be reviewed for adequacy and feasibility (typically part of PC/M review process). The computer software being developed shall receive at least one design review covering the complete design as described in the SDD. The SDD shall be reviewed to ensure that it implements the SRS, and approved. The majority of the SDD may be from pre-existing vendor controlled documentation/spec sheet if it meets the criteria.

- 4) V&V shall be performed in accordance with Section 5.6.
- 5) User manuals (vendor manuals) shall be obtained or developed as required based on the complexity of the software.
- 6) Process software errors or defects shall be screened for potential 10CFR21 applicability/evaluation (see ENG QI 2.2).
- 7) Installation of new or revised process software must consider plant operation in all modes, as well as intermediate plant configurations during software installation.
- 8) Modifications to process software shall be accomplished using the applicable PC/M process. The 10CFR50.59 considerations shall be addressed as part of the PC/M. All affected documentation required by Section 6.0 shall be revised as required to reflect the software revision. See Section 5.6 for verification/validation requirements for revised software.
- 9) Process software changes that affect control room indication shall be duplicated in the control room simulator software.

5.6 Software Verification & Validation Plan and Report (SVVP and SVVR)


V&V of newly developed/revised computer software shall be completed prior to use. V&V is a multi-faceted process that may include product in-process reviews, product evaluation and testing, process and product audits, process and algorithm analysis, anomaly detection and resolution, as well as other associated activities. V&V is modeled to follow the guidance of IEEE Std 1012, "Software Verification and Validation Plans". V&V planning must take into consideration such project characteristics as software criticality (including the software classification), safety and reliability requirements, schedule, resources, customer expectations, etc. Note that critical software as referred to in the standard applies to safety related process and SQA1 software only.

- 1) V&V results shall be reviewed by an independent individual other than the developer of the software.

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- 2) V&V shall include a review of the SRS, and SDD and preparation of a Software Validation and Verification Plan (SVVP), and test procedure (STP), and Software Validation and Verification Report (SVVR); or equivalents; to ensure that all requirements and referenced standards have been satisfied.
- 3) The Software Validation and Verification Plan (SVVP) shall describe the methods/tests which will be used to verify the computer software, the method/frequency of periodic follow-up validation, test documentation required, and acceptance criteria (input data vs expected results). The SVVP shall specify any validation (benchmarking) to be performed on a periodic basis. (Note: Process software is controlled via the plant's maintenance program and appropriate validation is performed to ensure accurate operation of safety related functions.) Validation ensures that the software, operating system, and hardware are collectively working correctly and producing valid results. The frequency of periodic validation (benchmarking) should be determined from the frequency of use of the software, since the purpose of the validation is to ensure accurate operation on a continuing basis. For example, if a particular program is used once every 6 months, validation could be performed prior to each use. However, if a program is used 3 times a day, validation prior to each use is clearly not warranted, and a weekly or monthly schedule may be more appropriate. The determined frequency of validation (based on the above and/or vendor recommendations) shall be specified on Form 136 (or equivalent) and shall be maintained in the CSI for non-process software. In addition to periodic validation, specific validation shall be performed following any significant change in hardware (including configuration of CPU), operating system, or program.
- 4) Testing shall be conducted per a Software Test Procedure (STP) or equivalent in a controlled manner such that there is minimal risk of losing data, damaging files, etc. The test scenario and environment shall be functionally equivalent to the working environment to ensure a representative test. The STP shall include a description of the test(s) to be conducted, test methods to be used, documentation to be generated, range of input parameters and their expected output, criteria for acceptance, and identification of support software/hardware to be used. The STP shall be included in the SVVP. Testing shall ensure that the software, operating system, and hardware are collectively working correctly and producing valid results. The results of the testing and associated documentation shall be placed in a SVVR or other QA record documentation.

Testing shall ensure adherence to requirements and ensure that the software produces correct results for the test cases. To evaluate technical adequacy, the test case shall be compared to results from alternative methods such as:

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- hand calculations
- functionally equivalent and previously validated software
- experiment and test results
- standard problems with known solutions
- confirmed published data and correlations


- 5) The Software Validation and Verification Report (SVVR) shall be prepared to summarize and document validation and verification results.
- 6) Separate SVVP and SVVR documents are not required if the requirements are enveloped by a single document.

5.7 10CFR50.59 Requirements

New non-process software or changes to non-process software (purchased or developed) which fall within the scope of this procedure shall be reviewed for 10CFR50.59 applicability. This shall be accomplished by screening the software using the following screening questions. The determination of this screening shall be specified on Form 136 (or equivalent) and shall be maintained in the CSI. Guidance on 10CFR50.59 Generic Exclusion shall be provided in lower tier NIS working Procedures.

- Does the new addition of/change in software represent a change to the facility as described in the SAR?
- Does the new addition of/change in software represent a change to procedures described in the SAR?
- Is the new addition of/change in software associated with a test or experiment not described in the SAR?
- Could the new addition of/change in software affect nuclear safety in a way not previously evaluated in the SAR?
- Does the new addition of/change in software require a change to the Technical Specifications?

If the answer to any of the above screening questions is "YES", then a 10CFR50.59 evaluation shall be prepared to support the new software addition or software change. If required, the 10CFR50.59 evaluation shall be performed in accordance with ENG QIs 2.0 and 2.1.

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5.8 Pre-Existing Software Requirements

Pre-existing non-process computer software is defined as software which was placed into a production environment prior to, and not modified since the implementation of FPL's software QA program (before 1990). Pre-existing computer software (purchased, developed, or otherwise obtained) which falls under the scope of this procedure shall be evaluated in order to justify continued use. Although the specific requirements for an SRS, SDD, SVVP, and SVVR need not be retrofitted to pre-existing software, periodic validation testing and verification testing for revisions to the software must be performed and controlled in accordance with this procedure. See Section 5.6. Form 136 (or equivalent) shall be prepared for all pre-existing computer software within the scope of this procedure, and submitted to NIS for inclusion in the CSI.

Revisions to pre-existing process software shall be purchased such that V&V is performed to the level of the original equipment, as a minimum.

5.9 Software Configuration Requirements

Process software configuration is controlled via the PC/M process.


Non-process software configuration control shall be maintained via the CSI in accordance with Section 5.10. Newly developed, purchased, or revised software shall be identified to NIS via Form 136 (or equivalent). Additional guidance on software configuration control is provided in lower tier NIS working procedures.

Revisions to software may be required for the following reasons:

- discrepancies noted during validation
- discovery of software errors
- modifications or revisions in software requirements

The following steps are to be followed in performing software revisions:

- 1) All software revision/modification to be performed by NIS shall be initiated by an RFS. Details and guidance on the RFS process are provided in lower tier NIS working procedures.
- 2) Revisions to computer software shall be verified and processed in accordance with the requirements of this instruction pertaining to newly purchased/developed software (See Sections 5.4 and 5.5).
- 3) All affected documentation required by Section 6.0 shall be revised as required to reflect the software revision. All superseded documentation shall be retained and traceable to the specific software revision/version.

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- 4) Emergency maintenance of software (limited to loss of functionality or system availability) shall be initiated with NIS personnel, with follow-up documentation requirements defined in lower tier NIS working procedures. Verbal initiation shall be acceptable for emergency maintenance.
- 5) Changes to data required by mathematical modeling applications to perform correctly shall be controlled via an approved Nuclear Quality Assurance Program (Vendor or FPL). Validation of changes shall be performed in accordance with an SVVP or equivalent (see Section 5.6). Validations of this nature may be performed as part of the SVVP for the respective software application.

5.10 Computer Software Index (CSI)


NIS shall maintain and distribute the CSI, which is a compilation of inputs from Forms 135, 136, and all SVVRs. Non-process software which falls under this instruction shall be listed in the CSI. Additional guidance on the CSI is provided in lower tier NIS working procedures. Information contained in the CSI includes:

- Software Name
- Version/Revision
- Revision Status
- QAP Applicable
- Non-process Software Category (SQA1/2/3/4)
- Program Language
- Host System
- Operating System
- Description
- Manual Revision
- Software Developer
- Custodian
- User Contact
- Validation Frequency
- Validation Date

6.0 RECORDS

The following documents (as applicable) shall be submitted to Juno Document Control and retained as QA records in accordance with QI 3.0:

- Form 135
- Form 136
- Software Procurement Documentation
- Software Requirements Specification (SRS) and review(s)
- Software Design Description (SDD) and review(s)
- Software Validation and Verification Plan (SVVP)

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- Software Validation and Verification Report (SVVR)
- Testing Procedure/Software Test Plan (STP)
- User Manuals
- 10CFR50.59 Applicability Review
- 10CFR21 (SSH) Applicability Review
- Production Release Forms
- Revision Documentation
- Software Problem/Error Documentation (Form 138)
- Request for Service (RFS)
- Training Documentation

The documents referred to above should be assembled/stored as an overall package (i.e., all documents pertaining to a specific software version should be traceable and preferably filed together). Note that for process software, documentation required above may be submitted to Site Document Control as an attachment to the PC/M. A copy of Forms 135, 136, 138, and all SVVRs shall also be submitted to NIS.

Archived magnetic media shall be maintained in designated storage facilities to protect against inadvertent damage. System software shall be used to manage archived magnetic media on the Mainframe. Master PC software/controlled data diskettes shall be retained in a controlled manner (traceable to the CSI) by NIS.


7.0 REFERENCES, DEFINITIONS, AND ABBREVIATIONS

7.1 References

- 1) NUREG/CR-4640, Handbook of Software Quality Assurance Techniques Applicable to the Nuclear Industry
- 2) ANSI/ASME NQA-2a-90, Part 2.7, Quality Assurance Requirements of Computer Software for Nuclear Facility Applications

7.2 Definitions

See Glossary

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7.3 Abbreviations

CPO - Computer Operations
 CSI - Computer Software Index
 LAN - Local Area Network
 NIS - Nuclear Information Services
 PC/M - Plant Change/Modification
 PDM - Production Data Modification
 QAP - Quality Assurance Program
 RFS - Request for Service
 SRR - Software Requirements Review
 SRS - Software Requirements Specification
 SDD - Software Design Description
 SDR - Software Design Review
 STP - Software Test Plan
 SVVP - Software Validation and Verification Plan
 SVVR - Software Validation and Verification Report

APPARENT VIOLATIONS

PREDECISIONAL

VIOLATION A

10 CFR 73.55(7) requires that licensee's shall establish an access authorization system to limit unescorted access to vital areas during non-emergency conditions to individuals who require access in order to perform their duties.

The licensee's Physical Security Plan (PSP), Revision 48, dated 2/23/96 states, "Only those individuals with identified need for access and having appropriate authorization, shall be granted unescorted Vital Area access."

From July 28, 1996 to September 19, 1996 an individual whose employment terminated on July 28, 1996, had unescorted access to protected and vital areas without appropriate authorization. In addition, on August 7; August 9; and August 15, 1996, that individual entered the protected area and had access to vital areas.

Also, five other individuals had unescorted access to the protected and vital areas after they were terminated from the period of July 27 to September 19, 1996, without appropriate authorization. However, those individuals did not access the protected or vital areas.

NOTE: The apparent violations discussed in this enforcement conference are subject to further review and are subject to change prior to any resulting enforcement decision.

APPARENT VIOLATIONS

PREDECISIONAL

VIOLATION B

10 CFR 73, Appendix G, states that an actual entry of an unauthorized person into a protected area or vital area be reported within one hour of discovery.

10 CFR 73, Appendix G, states that any failure, degradation, or discovered vulnerability in a safeguards system that could have allowed unauthorized or undetected access to a protected area or a vital area had compensatory measures not been established, be recorded within 24 hours of discovery in the safeguards event log.

On October 9, 1996, the licensee discovered that an individual had been terminated on July 28, 1996, and had entered the protected area on five different occasions, yet failed to make a report within the one hour timeframe. In addition, on September 19, 1996, the licensee discovered three individuals who had previously been terminated on July 27, July 28, and August 24, 1996 that had access to the protected area and failed to report that discovery in the safeguards event log.

NOTE: The apparent violation discussed in this enforcement conference are subject to further review and are subject to change prior to any resulting enforcement decision.

APPARENT VIOLATION B

PREDECISIONAL

As of August 19, 1996, Technical Specification (TS) 6.8.1.e required that written procedures be established, implemented, and maintained covering Emergency Plan implementation. (The subject TS was deleted with NPC approval effective August 20, 1996, but these examples of inadequate EPIPs existed in the same form prior to August 20, 1996 as when identified during the inspection.)

Procedures covering Emergency Plan implementation were not adequately established, implemented, and maintained with respect to the following aspects of the Emergency Plan:

- a. recovery activities, as discussed conceptually in REP Section 5.4
- b. description and delineation of the licensee's emergency response organization (ERO) and the detailed means for notifying ERO members in an emergency, as discussed generally in REP Section 2.2
- c. relocation of the OSC if required by radiological or other adverse conditions during an emergency, as referenced in REP Section 2.4.4

NOTE: The apparent violations discussed in this enforcement conference are subject to further review and are subject to change prior to any resulting enforcement decision.

APPARENT VIOLATION C

PREDECISIONAL

10 CFR 50.54(q) requires that nuclear power plant licensees follow and maintain in effect emergency plans which meet the planning standards of 10 CFR 50.47(b) and the requirements in Appendix E to 10 CFR Part 50.

REP Section 7.2.1, "Objectives", stated the following: "The primary objectives of emergency response training are as follows: 1. Familiarize appropriate individuals with Emergency Plan and related implementing procedures. 2. Instruct individuals in their specific duties to ensure effective and expeditious action during an emergency. 3. Periodically present significant changes in the scope or content of the Emergency Plan. 4. Provide refresher training to ensure that personnel are familiar with their duties and responsibilities." REP Section 7.2.2, "Training of On-Site Emergency Response Organization [ERO] Personnel", states, "The training program for members of the on-site emergency response organization will include practical drills as appropriate and participation in exercises, in which each individual demonstrates an ability to perform assigned emergency functions... For employees with specific assignments or authorities as members of emergency teams, initial training and annual retraining programs will be provided. Training must be current to be maintained on the site Emergency Team Roster." REP Section 7.3.2 states, "The Plant Training Manager will ensure that on-site Emergency Response Organization personnel are informed of relevant changes in the Emergency Plan and Emergency Plan Implementing Procedures [EPIPs]."

- a. In 1994, the licensee failed to provide initial training or annual retraining for 17 positions (approximately 92 individuals) identified as part of the on-site response organization. In 1995, the licensee failed to provide initial training or annual retraining for 8 positions (approximately 54 individuals) identified as part of the on-site response organization.
- b. The licensee's training program failed to include initial training or annual retraining on all procedures required to be implemented by ERO personnel in several identified positions. Examples: EPIP 3100027E, "Re-entry" - Emergency Coordinator, Radiation Team Leader, OSC Supervisor, Re-entry Team Supervisor, Re-entry Team Member, OSC Status Board Keeper, and OSC Dose Recorder. EPIP 3100026E, "Criteria for and Conduct of Evacuation" - Emergency Coordinator, Assembly Area Supervisor, and TSC Security Supervisor. EPIP 3100035E, "Off-site Radiation Monitoring" - Radiation Team Leader and ISC Supervisor.

The Plant Training Manager failed to ensure that ERO personnel in several identified positions were informed of relevant changes in procedures. Example: EPIP 3100026E, "Criteria for and Conduct of Evacuations".

- c. For the calendar year 1995, the licensee failed to remove from the emergency response organization two individuals who had not completed retraining as required, and whose qualifications had expired in 1994. The licensee also failed to remove six individuals from the emergency team roster effective October 6, 1996, who had not remained qualified to fill response team requirements as a result of allowing their respirator qualifications to lapse.

APPARENT VIOLATIONS

PREDECISIONAL

VIOLATION A

10 CFR 50, Appendix B, Criterion III, Design Control, requires, in part, that measures be established to ensure that the design basis is correctly translated into drawings and that design control measures provide for verifying the adequacy of the design by individuals other than those who performed the original design.

FPL Topical Quality Assurance Report, TOR 3.0, Revision 11, "Design Control," Section 3.2.4, "Design Verification," stated, in part, "Design control measures shall be established to independently verify design input... Design verification shall be performed by technically qualified individuals or groups other than those who performed the design."

Engineering Quality Instructions (QI) 1.7, Design Input/Verification, dated July 5, 1995, states, in part, that "Design verification is the process whereby a competent individual, who has remained independent of the design process, reviews the design inputs, ... and design output to verify design adequacy. This independent review is provided to minimize the likelihood of design errors in items that are important to nuclear safety."

- 1) On July 30, 1996, it was discovered that a design change (PC/M 009-195) to install new nuclear instrumentation system drawers did not receive an independent design verification by a competent individual independent of the design process. Design change PC/M 009-195 was completed by a lead designer and a lead engineer. This design change was independently verified by a second designer who had no special knowledge of the design. The design was then approved by the lead engineer whom was not independent of the design process.
- 2) On July 30, 1996, it was discovered that an independent design review was not conducted for the installation of a new core flux monitoring computer code BEACON. During initial operation of BEACON it was found that the code did not compensate for a core mid-plane offset created by a previous core modification. The engineer who prepared the design was not aware of the core mid-plane offset and the lack of an independent review of the new BEACON code did not provide the opportunity to identify this omission.

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NOTE: The apparent violations discussed in this enforcement conference are subject to further review and are subject to change prior to any resulting enforcement decision.

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APPARENT DEVIATION

PREDECISIONAL

Amendment Nos. 147 and 86 to the operating licenses for Units 1 and 2, respectively, were approved by the NRC on August 20, 1996, and consisted of changes to the TS in response to the licensee's application dated August 16, 1995. Among numerous changes in these amendments were the deletion (for both Units 1 and 2) of the previous TS 6.8.1.d and TS 6.8.1.e, which formerly specified that "Written procedures shall be established, implemented and maintained" to cover "Security Plan implementation" and "Emergency Plan implementation", respectively. In Attachment 2, "Safety Analysis", to the August 15, 1995 application, the licensee stated (in the introduction to the section addressing modifications to TS 6.5.1.6.i, 6.5.1.6.j, 6.8.1.d, and 6.8.1.e) that the "selected Technical Specifications are being relocated to the Emergency Plan or Security Plan as appropriate. Relocating these requirements to the appropriate plan will ensure the control of future changes are under the requirements of 10 CFR 50.54, 10 CFR 73.55 and 10 CFR 73.56." The NRC's referenced approval of the subject application stated that the "licensee proposes to relocate these review requirements and their implementing procedures to the St. Lucie Security and Emergency Plans..."

The licensee failed to relocate the requirements formerly found in TS 6.8.1.d and 6.8.1.e to the Security Plan or Emergency Plan, as applicable, in accordance with the commitment to the NRC contained in the licensee's application dated August 16, 1995.

NOTE: The apparent violations discussed in this enforcement conference are subject to further review and are subject to change prior to any resulting enforcement decision.

VIOLATION B

PREDECISIONAL

Technical Specification 6.8. Procedures and Programs, paragraph 6.8.1 requires, in part, that written procedures recommended in Appendix A of Regulatory Guide 1.33 revision 2, February 1978, shall be established and implemented.

Engineering Quality Instruction (QI) 3.7, Computer Software Control, Revision 1, Section 5.4, requires that SQAL software shall be validated and verified (V&V'ed) in accordance with Section 5.6 of QI 3.7. Section 5.6 states that new software shall be V&V'ed prior to use. The V&V process includes the use of test cases to ensure the new software produces correct results. Item 4 of Section 5.6 states that technical adequacy shall be determined by comparing the test case to results from alternative methods such as functionally equivalent and previously validated software.

*requires
indep
review*

During the Unit 1 Cycle 14 outage, BEACON core monitoring system was placed into service on Unit 1 without any benchmarking against IMPAX, the on-line core performance monitoring code BEACON was replacing. Instead, BEACON was installed on Unit 2 and benchmarked against CECORE, the core monitoring system installed on Unit 2, which did not require any modifications to accommodate the core midplane offset.

NOTE: The apparent violations discussed in this enforcement conference are subject to further review and are subject to change prior to any resulting enforcement decision.

VIOLATION C

PREDECISIONAL

Technical Specification 6.8, Procedures and Programs, paragraph 6.8.1, requires in part that written procedures recommended in Appendix A of Regulatory Guide 1.33 revision 2, February 1978, shall be established and implemented.

Administrative Procedure No. 0006130, Condition Reports, Revision 4, dated March 22, 1996, Par. 8.1.1.A states in part that "Any individual who becomes aware of a problem or discrepant condition ... should initiate a CR. If doubt exists, a CR form should be initiated".

On July 30, 1996, Instrument and Control technicians installing Modification PC/M 009-195 did not initiate a Condition Report when they became aware of a discrepant condition when markings for electrical terminal connectors differed from existing cable markings. The failure to resolve the discrepant condition resulted in incorrectly installing two excore nuclear instrumentation system detectors.

NOTE: The apparent violations discussed in this enforcement conference are subject to further review and are subject to change prior to any resulting enforcement decision.

ENCLOSURE 4

EICS ENFORCEMENT WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

(To be Completed by EICS per ROI 0912)

EA NUMBER: 96-260FACILITY: St. LucieSUBJECT: Preconditioning valves☒ PANEL ☐ PEC ☐ CAUCUS
☐ OTHER ☐ OI BRIEF

ATTENDEES

JAUDON
GIBSON
WEIMS
MILLER*
GRAY*LANDIS
URYC
MUNDAY*
LIEBERMAN*
BEALL*PREPARED BY: B URYCDATE: 071696 TIME: 11:00

I. EICS STAFF NOTES:

Stroke time did not change as a result of prelude according to licensee. Lubrication was not intended to increase time.

lig initiated stop to determine extent of condition only found on trip/throttle valve no other procedures revised to delete prelude -

STAR 951048 a result of NAC inquiry =

No significant regulatory concern based on fact valves have been tested previously w/o prelude and times have not changed appreciably. --

It - is this an isolated issue were there was a perfunctory change w/o review. → YES, Staff views this as isolated

EEJ 97

ENFORCEMENT ACTION WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

(To be Completed by EICS per ROI 0912)

II. Civil Penalty Assessment

A. First non-willful SL III violation in 2 years/2 inspections? YES or NO

Previous escalated cases:

B. Identification Credit? YES - NO - N/A

NRC identified?

Licensee identified?

Revealed through an event?*

Prior opportunities?

C. Corrective action credit? YES - NO - N/A

Immediate corrective actions:

Long term corrective actions to prevent recurrence:

D. Discretion applied? Yes or No: Reason why.

E. Civil Penalty: _____

F. Recommendation for predecisional enforcement conference:

ENFORCEMENT ACTION WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

(To be Completed by EICS per ROI 0912)

NOTE: Complete the following information for each violation

ISSUE:

III. Documentation of Enforcement Panel/Caucus Consensus

- A. Preliminary Severity Level (Prior to Application of any Discretion, From Part I) _____
- B. Increase Severity Level based on Aggregation?
- C. Increase Severity Level for Repeat Violations?
 (Address requirements of ROI 0903)
- D. Increase Severity Level for Willfulness? _____
- E. SEVERITY LEVEL 4 SUPPLEMENT/SECTION _____
- F. Recommended Civil Penalty _____
- G. Predecisional Enforcement Conference Necessary? _____
- H. Revision to Draft NOV Required? _____
- I. Formal Review by OE Required? _____
- J. Special Action Items / Message to Licensee / Comments

Consensus w/all in agreement that this was a SL4 -
 - Strong message re procedure process that failed to catch this
 - we considered higher level for
 we're concerned this change was not recognized as it is obvious -
 people who wrote it should have recognized preconditioning - missed

Only because of⁴

ENFORCEMENT ACTION WORKSHEET

PRELUBRICATION OF VALVES PRIOR TO ASME SECTION XI TESTING

PREPARED BY: Joe] T. Munday

DATE: July 11, 1996

NOTE: The Section Chief of the responsible Division is responsible for preparation of this EAW and its distribution to attendees prior to an Enforcement Panel. The Section Chief shall also be responsible for providing the meeting location and telephone bridge number to attendees via e-mail [ENF.GRP, CFE, OEMAIL, JXL, JRC, SHL, LFD; appropriate RII DRP, DRS; appropriate NRR, NMSS]. A Notice of Violation (without "boilerplate") which includes the recommended severity level for the violation is required. Copies of applicable Technical Specifications or license conditions cited in the Notice or other reference material needed to evaluate the proposed enforcement action are required to be enclosed.

This Notice has been reviewed by the Branch Chief or Division Director and each violation includes the appropriate level of specificity as to how and when the requirement was violated.

Signature

Facility: St. Lucie
Unit(s): 1, 2
Docket Nos: 50-335, 50-389
License Nos: DPR-67, NPF-16
Inspection Report No: 50-335,389/96-11
Inspection Dates: July 7 - August 3, 1996
Lead Inspector: Mark Miller

1. Brief Summary of Inspection Findings:

An NRC inspector identified, through document review, that the Unit 1 containment spray flow control valve, 1-FCV-07-1A, was being preconditioned prior to being tested. Specifically, prior to the performance of the surveillance which verifies proper stroke-time of the valve, lubrication was applied to the valve stem. Further inspection identified that three other containment spray valves were also prelubricated prior to being stroke-time tested.

The licensee had noted in a QA assessment that this practice was occurring, however, it was not highlighted as significant nor was a STAR written to document its occurrence. The QA assessment indicated that there did not appear to be a correlation between frequency of lubrication and test performance. However, when informed by the inspector that this practice could result in not obtaining true as-found data and would not provide reliable trend information, the licensee agreed and revised the appropriate procedures to delete the practice. Violation 335/95-15-05 was issued documenting the fact that a STAR was not initiated as required by plant procedures. Corrective actions for this violation included documenting the event in STAR 951048 as well as revising the applicable procedures to remove the practice of

PROPOSED ENFORCEMENT ACTION - NOT FOR PUBLIC DISCLOSURE
WITHOUT THE APPROVAL OF THE DIRECTOR, OE

EEJ/98

prelubricating other valves prior to surveillance testing. In addition, STAR 951063 was written to review other test and surveillance procedures to determine if similar conditions existed elsewhere. One additional valve was identified that might be impacted by this practice and that problem was also corrected. The licensee stated, in response to STAR 951063, that the PMs which lubricated the valves were performed along with the stroke-time surveillance because the surveillance was required as a PMT following the PM. By scheduling the PM to be performed prior to the surveillance the number of surveillances performed would be reduced. 10 CFR 50, Appendix B, Criterion XI, requires, in part, that testing required to demonstrate that systems and components will perform satisfactorily in service shall be performed under suitable environmental conditions. Prelubrication of valves prior to performing stroke-time tests violates this requirement and negates the validity of the test in assessing the operational readiness of the valve.

Proposed NOV

10 CFR 50, Appendix B, Criterion XI, requires, in part, that a test program shall be established to assure that all testing required to demonstrate that systems and components will perform satisfactorily in service is identified and performed in accordance with written test procedures. Test procedures shall include provisions for assuring that the test is performed under suitable environmental conditions.

Contrary to the above, Administrative Procedures, AP-1-0010125A, revision 39 for Unit 1 and AP-2-0010125A, revision 43 for Unit 2, did not ensure that the procedures were performed under suitable environmental conditions. Specifically, the two aforementioned procedures directed that valves 1-FCV-07-1A, 1-FCV-07-1B, 2-FCV-07-1A, and 2-FCV-07-1B be lubricated prior to being tested. This practice negated the ability to assess the operational readiness of the valves.

This is a Severity Level IV violation (Supplement I).

2. **Analysis of Root Cause:**

It appears that the surveillance procedures were revised in September, 1994 to include lubricating the valves prior to performance. The licensee's response to STAR 951063 indicated that this was done as a means of reducing the number of surveillances required to be performed. The licensee did not consider the effect this practice would have on the validity of the as-found data. This decision appears to have been a result of poor engineering judgement.

3. **Basis for Severity Level (Safety Significance):**

Severity Level IV: Supplement I.D.3 which states, "A failure to meet regulatory requirements that have more than minor safety or environmental significance."

4. **Identify Previous Escalated Action Within 2 Years or 2 Inspections?**

EA 96-040, 1/22/96, Level III Base CP: Overdilution Event
EA 95-180, 8/4/95, Level III Base CP: Inoperable PORVs

5. **Identification Credit?** [Enter Yes or No]: No

Consider following and discuss if applicable below:

☐ Licensee-identified ☐ Revealed through event ☐ NRC-identified
☐ Mixed identification ☐ Missed opportunities

Enter date Licensee was aware of issues requiring corrective action:

September, 1996 when questioned by NRC inspector.

Explain application of identified credit, who and how identified and consideration of missed opportunities:

Although identified in a licensee QA assessment report, the licensee did not realize the significance until identified by NRC.

6. **Corrective Action Credit?** [Enter Yes or No]: Yes

Brief summary of corrective actions:

Upon identification that this practice was unacceptable, the applicable procedures were revised to delete the practice. Other plant systems and procedures were reviewed to determine extent of condition with only one additional case being identified. This example was also corrected.

**PROPOSED ENFORCEMENT ACTION - NOT FOR PUBLIC DISCLOSURE
WITHOUT THE APPROVAL OF THE DIRECTOR, OE**

Explain application of corrective action credit:

Corrective actions were completed quickly and included a generic review of other systems, both by the engineering staff and QA.

7. **Candidate For Discretion?** [See attached list] [Enter Yes or No]: No.

Explain basis for discretion consideration:

8. **Is A Predecisional Enforcement Conference Necessary?**

[Enter Yes or No]: NO.

Why: There is no additional information needed by the NRC and the licensee has corrected the condition.

If yes, should OE or OGC attend? [Enter Yes or No]:

Should conference be closed? [Enter Yes or No]:

9. **Non-Routine Issues/Additional Information:**

10. **This Action is Consistent With the Following Action (or Enforcement Guidance) Previously Issued:** [EICS to provide] [If inconsistent, include:]

Basis for Inconsistency With Previously Issued Actions (Guidance)

11. **Regulatory Message:**

The licensee needs to consider all impacts that a procedure change could have on a system prior to making the change. Additionally, stress the importance of as found trending of equipment performance.

12. Recommended Enforcement Action:

Level IV violation.

13. This Case Meets the Criteria for a Delegated Case. [EICS - Enter Yes or No]

14. Should This Action Be Sent to OE For Full Review? [EICS - Enter Yes or No]

If yes why:

15. Regional Counsel Review [EICS to obtain]
No Legal Objection Dated:

16. Exempt from Timeliness: [EICS]
Basis for Exemption:

Enforcement Coordinator:
DATE:

ENFORCEMENT ACTION WORKSHEET - ISSUES TO CONSIDER FOR DISCRETION

- ☐ Problems categorized at Severity Level I or II.
- ☐ Case involves overexposure or release of radiological material in excess of NRC requirements.
- ☐ Case involves particularly poor licensee performance.
- ☐ Case (may) involve willfulness. Information should be included to address whether or not the region has had discussions with OI regarding the case, whether or not the matter has been formally referred to OI, and whether or not OI intends to initiate an investigation. A description, as applicable, of the facts and circumstances that address the aspects of negligence, careless disregard, willfulness, and/or management involvement should also be included.
- ☐ Current violation is directly repetitive of an earlier violation.
- ☐ Excessive duration of a problem resulted in a substantial increase in risk.
- ☐ Licensee made a conscious decision to be in noncompliance in order to obtain an economic benefit.
- ☐ Cases involves the loss of a source. (Note whether the licensee self-identified and reported the loss to the NRC.)
- ☐ Licensee's sustained performance has been particularly good.
- ☐ Discretion should be exercised by escalating or mitigating to ensure that the proposed civil penalty reflects the NRC's concern regarding the violation at issue and that it conveys the appropriate message to the licensee. Explain.

PROPOSED ENFORCEMENT ACTION - NOT FOR PUBLIC DISCLOSURE
WITHOUT THE APPROVAL OF THE DIRECTOR, OE

Enclosure 3

REFERENCE DOCUMENT CHECKLIST

- [X] NRC Inspection Report or other documentation of the case:
NRC Inspection Report Nos.: 50-335,389/96-11
- [X] Licensee reports: STAR 951048, STAR 951063
- [] Applicable Tech Specs along with bases:
- [] Applicable license conditions
- [X] Applicable licensee procedures or extracts
AP-1-0010125A; AP-2-001012A
- [] Copy of discrepant licensee documentation referred to in citations such as NCR, inspection record, or test results
- [] Extracts of pertinent FSAR or Updated FSAR sections for citations involving 10 CFR 50.59 or systems operability
- [] Referenced ORDERS or Confirmation of Action Letters
- [] Current SALP report summary and applicable report sections
- [X] Other miscellaneous documents (List):
TIA 96-007 - Acceptability of Lubricating Valves Prior to Surveillance Testing

TO: B URYC EA TRANSMITTAL - ONE PAGE OM.
 FROM: BEALL (301) 415-3281

OE UNDERSTANDING AND EA REQUEST FORM

Pre Conference: N/A
 Post Conference: N/A

EATS Data Entry Information

Date of Request: 7/16/96 Region: II CaseType: R2 Reg. Contact: URYC
 Licensee: FP4L Facility (Unit)/Location: ST LUCIE
 Docket No: 50-335,389 Last Day of Inap: 8/3/96 Date of OI Ref.: —
 OI Rpt No.: — OI Rpt Date: — Conference Open 1: —

Summary of Facts:

Pre-conditioning of Containment spray shield (before testing)
Inadvertent, changed in '94, Q'd by NRC '95, changed back. This
worked okay in pre-change Q'ty tests and Q'ty tests after
changed back - this is basis not a signif reg concern. Cover
this to address 50.59/Q attitude/stand/Maint aspects of concern.

EA Number: 96-260 ES: JB

SL II Supp 2

Details: Criterion XI - testing

Supp —

Notes: *** This is followup of 10/95 Panel & TIA to NRC ***

SL — Supp —

Details: —

1. Prior Escalated Action? ☐ No ☐ Yes - EA: — Date: N/A
2. Identification? ☐ Lic. Credit ☒ No Credit ☐ Inad. Info ☐ NA Comments: —
3. Corrective Action? ☒ Lic. Credit ☐ No Credit ☐ Inad. Info Comments: —
4. Enforcement Conference Needed? ☒ No ☐ Yes Comments: —
5. Discretion or Order Needed? ☒ No ☐ Yes Comments: —
6. Action? ☐ Submit to CR ☒ Regional Action ☐ Choice Letter ☐ DEDO Review ☐ Commission ☐ Disagreement
☐ Other: —
7. CP? ☐ No CP ☐ Base CP ☐ Double Base CP ☐ Other: N/A
8. Willfulness involved? ☒ No ☐ Yes ☐ OI Coordinated ☐ Needs OI Coordination

Program Office Represented? ☒ No ☐ Yes

11. OGC Represented? ☐ No ☐ Yes

Comments: —

Approved: 99 Gray

Date: 7/16/96

SLIV

96E056

ENCLOSURE 4

EICS ENFORCEMENT WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

(To be Completed by EICS per ROI 0912)

FA NUMBER: 96-263

FACILITY: H. Luni

SUBJECT: OT

☐ PANEL ☐ PEC ☐ CAUCUS
☐ OTHER ☐ OI BRIEF

ATTENDEES

M. Miller J. Beale
T. Johnson B. Lacy
C. Evans A. Baland
K. Landis A. Gibson
H. Satrijs

PREPARED BY: Ann Baland

DATE: 7/23/9 TIME: 11:30

I. EICS STAFF NOTES:

Loss of Control - Overtime - 1st time

- multiple examples (38-72h)
15-24h
3-16h

C.A - accountability + audit actions left
to redme

- immediate actions taken

- stand-down over the weekend

QA - had already identified (unknown to URC)

Cause → ① individuals failed to implement OT process
② management reviews of OT usage

No management prior approval of OT worked - only
after the fact management timecard approval

Must get deviation for a job - thought it applied
to job - should have done daily

Computer algorithm didn't not pick-up → not
a rolling seven day average

EEE/100

ENFORCEMENT ACTION WORKSHEET
EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

(To be Completed by EICS per ROI 0912)

II. Civil Penalty Assessment

A. First non-willful SL III violation in 2 years/2 inspections? YES or NO

Previous escalated cases:

B. Identification Credit? YES - NO - N/A

NRC identified?

Licensee identified?

Revealed through an event?*

Prior opportunities?

C. Corrective action credit? YES - NO - N/A

Immediate corrective actions:

Long term corrective actions to prevent recurrence:

D. Discretion applied? Yes or No: Reason why.

E. Civil Penalty: _____

F. Recommendation for predecisional enforcement conference:

ENFORCEMENT ACTION WORKSHEET EICS MEETING NOTES AND DOCUMENTATION OF UNDERSTANDING

(To be Completed by EICS per ROI 0912)

NOTE: Complete the following information for each violation

ISSUE:

III. Documentation of Enforcement Panel/Caucus Consensus

A. Preliminary Severity Level SL IV ^(prior) to Application of any Discretion, From Part I) _____

B. Increase Severity Level based on Aggregation? No

C. Increase Severity Level for Repeat Violations? No

(Address requirements of ROI 0903)

D. Increase Severity Level for Willfulness? No

E. SEVERITY LEVEL SL IV SUPPLEMENT/SECTION I.

F. Recommended Civil Penalty N/A

G. Predecisional Enforcement Conference Necessary? N/A

H. Revision to Draft NOV Required? Yes - Added SL IV

I. Formal Review by OE Required? No

J. Special Action Items / Message to licensee / Comments

*Not wrong-doing — other factors
predominantly 1st line maintenance supervisor
directing people in the field
trouble shooting
solving technical issues*

*Longest 26 hours - continuously
192 hours in 2 week period (4hr a day)*

*23 sample 6/7-13 → following Site VP becoming
aware & some C.A. (meeting)
did not preclude recurrence*

Why so long to trickle down to staff from VP? unknown

Additional Meeting 6/19

GA told them about on 6/6 - report issued sometime later

Potentially not that unusual - gut feeling of SRI

Monthly review - TS + procedure requirement

- Procedure not specific on who + how

- Supervision may have been reviewing timecards but ineffective

Training deficiencies

Process problem - procedure defining; work w/o prior approval
Management Oversight issue

Performance declined because of OT - haven't identified

breakdown of management control - low safety significance
no declining performance

Strong correlation - lack of supervision in accounting training

SLIV - cited

Consider additional SLIV for inadequate procedure
No evidence of wrongdoing

OE and RII / NRE

ENFORCEMENT ACTION WORKSHEET

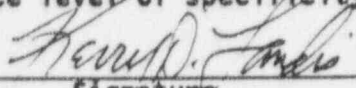
Failure to Maintain Overtime Within Guidelines

PREPARED BY: Mark S. Miller

DATE: 7/3/96

NOTE: The Section Chief of the responsible Division is responsible for preparation of this EAW and its distribution to attendees prior to an Enforcement Panel. The Section Chief shall also be responsible for providing the meeting location and telephone bridge number to attendees via e-mail (ENF.GRP, CFE, OEMAIL, JXL, JRG, SHL, LFD; appropriate RII: DRP, DRS; appropriate NRE, NMSS). A Notice of Violation (without "boilerplate") which includes the recommended severity level for the violation is required. Copies of applicable Technical Specifications or license conditions cited in the Notice or other reference material needed to evaluate the proposed enforcement action are required to be enclosed.

This Notice has been reviewed by the Branch Chief or Division Director and each violation includes the appropriate level of specificity as to how and when the requirement was violated.


Signature

Facility: St. Lucie

Unit(s): 1 & 2

Docket Nos: 50-335, 50-389

License Nos: DPR-67, MPF-16

Inspection Report No: 96-09

Inspection Dates: June 9 - July 6, 1996

Lead Inspector: Mark Miller

1. **Brief Summary of Inspection Findings:** A review of overtime over a one month period indicated that 56 individual deviations from TS required overtime guidelines occurred. The deviations were not approved by plant management, as required by TS. The deviations were committed by 5 individuals. The number of examples of the proposed violation indicates particularly poor performance by the licensee in this area.

2. **Analysis of Root Cause:** Failure, on the part of the individuals involved, to recognize the need for approved deviation requests, failures, on the part of plant management, to conduct effective reviews of overtime usage.

With regard to the differences between gate logs and timesheets, comments were also received indicating that, while management had stated that overtime guidelines should not be exceeded, an unexpressed pressure was perceived to meet outage schedules which led to work performed "off the clock." Additional comments were received which indicated that all of the parties interviewed were motivated by a desire to see jobs through to completion, with several stating that their own expectations for their performance factored into decisions to work extra hours.

3. **Basis for Severity Level (Safety Significance):** No operational event or challenge to a safety system has been identified as a result of the violation identified. This is proposed as a SL IV violation, Supplement I, D.3, a failure to meet regulatory requirements that have more than minor safety significance.

4. **Identify Previous Escalated Action Within 2 Years or 2 Inspections?**

EA 96-249 10 CFR 50.59 Deficiencies, Supplement 1, 7/96, (pending)
EA 96-236 Configuration Management Programmatic Breakdown, Supplement 1, 7/96 (pending)
EA 96-040 Boron Overdilution Event, Supplement 1, 1/22/96
EA 95-180 Inoperable PORVs due to Inadequate PMT, Supplement 1, 8/4/95

5. **Identification Credit? No**

Consider following and discuss if applicable below:

☐ Licensee-identified ☐ Revealed through event ☐ NRC-identified
☐ Mixed identification ☐ Missed opportunities

Enter date Licensee was aware of issues requiring corrective actions:
6/6/96

Explain application of identified credit, who and how identified and consideration of missed opportunities:

The issue of excessive overtime was identified by the licensee's QA organization in an audit conducted for the period of May 9 through 18. The NRC identified the issue in an audit conducted for the period of May 13 through June 13. The NRC was unaware of the licensee's audit. On June 6, QA discussed the issue with the Plant General Manager (PGM). Consequently, the Site VP and the PGM stressed personal accountability to their staff at morning meetings. Notwithstanding the licensee's immediate corrective actions, the NRC inspection identified 23 examples of unapproved deviations from the overtime guidelines in the time period from June 7 through 13.

While the licensee's QA organization was able to identify cases of excessive overtime, the licensee's program for controlling overtime usage was ineffective in identifying the issue sooner. By procedure, the licensee's management was to perform monthly reviews of overtime

usage. The procedure failed to specify which managers were responsible for the required reviews or how the reviews were to be conducted. Consequently, opportunities to identify the problem were missed.

6. Corrective Action Credit? Yes

Brief summary of corrective actions:

- Site VP and PGM discussed the problem with their staff at morning meetings stressing expectations for personal accountability in this area.
- PGM issued letter to department heads on June 19 restating guidelines and restressing personal accountability and the possibility for discipline for violation of the policy.
- The Site Services Manager proposed a monthly spot check of high overtime users, comparing time sheet totals to gate logs.
- The site VP explained to site management at a morning meeting, and later reiterated to the SRI, that it is his expectation that personnel working beyond guidelines receive prior approval, receive direct management oversight to ensure that fatigue does not impede the employee's abilities to work safely, and that employees working excessive hours receive a ride home and that someone else drive the employee's car home.
- QA has subsequently performed an audit of overtime use in the I&C department (the group showing the most examples of the inspector's violation) and has found no deficiencies, indicating that corrective action has been effective in the short term.

Explain application of corrective action credit:

The licensee's actions to date appear to have reestablished control over overtime usage.

7. Candidate For Discretion? [See attached list] [Enter Yes or No]:

Explain basis for discretion consideration:

8. Is A Predecisional Enforcement Conference Necessary? No

Why:

Severity of violation does not warrant conference. Additionally, no new information is predicted to be obtained.

If yes, should OE or OSC attend? [Enter Yes or No]:

Should conference be closed? [Enter Yes or No]:

9. Non-Routine Issues/Additional Information:

PROPOSED ENFORCEMENT ACTION - NOT FOR PUBLIC DISCLOSURE
WITHOUT THE APPROVAL OF THE DIRECTOR, OE

10. This Action is Consistent With the Following Action (or Enforcement Guidance) Previously Issued: [EICS to provide] [If inconsistent, include:]

Basis for Inconsistency With Previously Issued Actions (Guidance)

11. Regulatory Message:

A strong commitment to maintaining overtime usage at acceptable levels is necessary to minimize the potential for human error which might result in challenges to safety.

12. Recommended Enforcement Action:

SL IV

13. This Case Meets the Criteria for a Delegated Case. [EICS - Enter Yes or No]

14. Should This Action Be Sent to OE For Full Review? [EICS - Enter Yes or No]

If yes why:

15. Regional Counsel Review [EICS to obtain]
No Legal Objection Dated:

16. Exempt from Timeliness: [EICS]
Basis for Exemption:

Enforcement Coordinator:
DATE:

ENFORCEMENT ACTION WORKSHEET - ISSUES TO CONSIDER FOR DISCRETION

- ☐ Problems categorized at Severity Level I or II.
- ☐ Case involves overexposure or release of radiological material in excess of NRC requirements.
- ☐ Case involves particularly poor licensee performance.
- ☐ Case (may) involve willfulness. Information should be included to address whether or not the region has had discussions with OI regarding the case, whether or not the matter has been formally referred to OI, and whether or not OI intends to initiate an investigation. A description, as applicable, of the facts and circumstances that address the aspects of negligence, careless disregard, willfulness, and/or management involvement should also be included.
- ☐ Current violation is directly repetitive of an earlier violation.
- ☐ Excessive duration of a problem resulted in a substantial increase in risk.
- ☐ Licensee made a conscious decision to be in noncompliance in order to obtain an economic benefit.
- ☐ Cases involves the loss of a source. (Note whether the licensee self-identified and reported the loss to the NRC.)
- ☐ Licensee's sustained performance has been particularly good.
- ☐ Discretion should be exercised by escalating or mitigating to ensure that the proposed civil penalty reflects the NRC's concern regarding the violation at issue and that it conveys the appropriate message to the licensee. Explain.

PROPOSED ENFORCEMENT ACTION - NOT FOR PUBLIC DISCLOSURE
WITHOUT THE APPROVAL OF THE DIRECTOR, OE

Enclosure 3

REFERENCE DOCUMENT CHECKLIST

- [x] NRC Inspection Report or other documentation of the case:
NRC Inspection Report Nos.: IR 96-09
- [x] Licensee reports: Quality Assurance Audit QSL-PM-96-08
- [x] Applicable Tech Specs along with bases:
- [] Applicable license conditions
- [x] Applicable licensee procedures or extracts AP-0010119 Rev. 14
- [x] Copy of discrepant licensee documentation referred to in citations such
as NCR, inspection record, or test results Typical time sheet
- [] Extracts of pertinent FSAR or Updated FSAR sections for citations
involving 10 CFR 50.59 or systems operability
- [] Referenced ORDERS or Confirmation of Action Letters
- [] Current SALP report summary and applicable report sections
- [] Other miscellaneous documents (List):

Excerpt From St. Lucie Inspection Report IR 96-09

08.X Control of Overtime

The inspector reviewed the licensee's control of overtime for the period of May 13 through June 13. The inspector obtained gate logs for 26 individuals. The selected individuals were chosen from the licensee's maintenance, engineering, planning, and management organizations based upon their involvement in outage activities and the inspector's understanding of the activities under their cognizance. From the results obtained (which demonstrated time spent on site), the inspector reduced the inspection population to five individuals based upon indications of excessive hours. The individuals in question included supervisors and engineers with responsibilities for safety-related work.

As acceptance criteria, the inspector reviewed TS 6.2.f, which required that the hours expended by personnel performing safety-related functions be limited, with an objective that personnel work a normal 8 hour day, 40 hour week while the plant was operating. The TS observed that substantial amounts of overtime might be required during extended periods of shutdown for refueling, and established guidelines for these periods. The TS stated"

"...on a temporary basis the following guidelines shall be followed:

- a. An individual should not be permitted to work more than 16 hours straight, excluding shift turnover time.
- b. An individual should not be permitted to work more than 16 hours in any 24 hour period, nor more than 24 hours in any 48 hour period, nor more than 72 hours in any 7-day period, all excluding shift turnover time.
- c. A break of at least 8 hours should be allowed between work periods, including shift turnover time...

...Any deviations from the above guidelines shall be authorized by the Plant General Manager or his deputy, or higher levels of management, in accordance with established plant procedures and with documentation of the basis for the deviation." The inspector reviewed AP 0010119, revision 14, "Overtime Limitations for Plant Personnel," and found that the procedure appropriately implemented the TS requirements.

The inspector found that the licensee deviated from TS guidelines for the control of overtime without the prior (or subsequent) approval from senior plant management. Of the five individuals focused on as a result of gate logs, the following information was obtained from timesheets (violations of the requirements were cited only for excesses of requirements which had not received approval per AP 0010119):

Individual	Violations of 72 Hour Requirement	Violations of 24/48 Hour Requirement	Violations of 16 Hour Requirement
A	3	0	0
B	0	0	0
C	5	1	0
D	14	2	0
E	16	12	3
Total	38	15	3

The instances identified above, in which TS guidelines were exceeded, and for which the TS-required approvals for the deviations were not obtained, collectively represent a violation (VIO 96-09-XX, "Failure to Control Overtime").

While violations were identified, the inspector also noted that significant differences existed between timesheet records, which divided time between TS and non-TS categories, and gate records, which indicated total time on site. For the 5 individuals highlighted above, numerous instances of differences between total time on site and timesheet-indicated time on site existed, with differences frequently exceeding one and two hours and, at times, exceeding several hours. The most time spent continuously on site was noted to be approximately 26 hours.

The inspector discussed the results above with the affected parties to ascertain the reasons for the excessive use of overtime and for the differences between gate logs and timesheets. Responses were mixed. Regarding the heavy use of overtime, several respondents pointed out that the project that they had been working was adversely affected by the loss of several key personnel (one to layoffs, one to death, and one to termination for cause), which reduced the depth of knowledge on the associated job. Several stated that the diverse activities on both units (due to the outage on Unit 1 and the recent trip of Unit 2) had placed increased demands on their time.

In discussing the method for completing timesheets, the inspector found that a lack of uniformity existed. Some respondents treated work periods (as described on the timesheet) as any work performed on a given calendar day. By applying this approach, the potential existed for the work hours recorded for a given day to represent a composite value of two work periods if one (or more) of the work periods extended across midnight. The potential result of this type of accounting was that the true length of a work period, as referenced in TS, would not be accurately reflected on timesheets, confounding the ability to maintain an accurate count of daily, 48 hour and 7-day totals.

With regard to not obtaining the appropriate deviation approvals for time worked in excess of the guidelines, several workers stated that they believed that obtaining a deviation provided a blanket authorization for overtime spent on the project for which the deviation applied. The inspector noted that the AP was not specific as to whether a deviation request was required for each

planned deviation from the guidelines or whether it applied to the job which was described on the request. The inspector discussed this issue with the Plant General Manager, who stated that it was his expectation that a deviation request be filed for each planned deviation of the guidelines (the implication being that a series of work periods for which each period led to violations of one or more guidelines should each be documented on separate requests). The inspector had requested any deviation requests associated with the personnel audited for the subject time period. Two were identified which addressed themselves to 3 of the personnel. The deviations covered by these deviation requests were not considered in the summary table above.

AP 0010119 required that department heads perform a monthly review of assigned overtime to assure that excessive overtime was not assigned. The inspector questioned the licensee as to how those reviews were executed.....

Independent of this inspection (and unknown by the inspector), the licensee's QA organization performed an audit of overtime usage for the period from May 5 through 18. A population of 100 plant personnel was selected at random for the audit. QA reviewed gate logs for the sample population and applied criteria which assumed a one half hour lunch break and accepted turnover periods to reach the following criteria for determining whether guidelines had been exceeded:

- No more than 17.5 hours in 1 day.
- No more than 27 hours in a 48 hour period
- No more than 82.5 hours in a 7 day period
- An 8 hour break between work periods.

QA determined that 13% of their population exceeded the criteria at least once and that 8% exceeded the criteria at least twice. QA informed management of their findings in this area on June 6. As a result, the Site Vice President and the PGM discussed the problem with plant staff at morning meetings to stress expectations for personal accountability in this area. On June 19, the PGM issued a letter to department heads restating the overtime guidelines and stressing personal accountability on the issue. The inspector noted that, with respect to immediate corrective actions, 23 examples of unapproved deviations existed in the inspector's sample from June 8 through 13.

As a result of this inspection, the inspector concluded the following:

- Overtime usage for the period May 13 through June 13 has exceeded TS guidelines for a number of personnel.
- The licensee failed to effectively control overtime as required in AP 0010119, revision 14, "Overtime Limitations for Plant Personnel," in that deviation requests were neither prepared nor approved for the majority of deviations identified.
- AP 0010119 was unclear in its expectations, both for when a deviation request was required and for who was responsible for reviews of overtime usage (and how it was to be executed).

- The requirement for monthly reviews of overtime usage, detailed in AP 0010119, was ineffectively implemented.
- Personnel have, at times, worked hours which were not recorded on timesheets.

PREDECISIONAL
DRAFT INFORMATION - NOT FOR DISTRIBUTION

NOTICE OF VIOLATION

Florida Power & Light Company
St. Lucie 1 and 2

Docket Nos. 50-335 and 50-389
License Nos. DPR-67 and NPF-16

During an NRC inspection conducted on June 9 through July 6, 1996, violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," (60 FR 34381; June 30, 1995), the violations are listed below:

- A. Technical Specification 6.2.f, requires that the hours expended by personnel performing safety-related functions be limited and that during extended periods of shutdown for refueling, the following guidelines be observed:
- a. An individual should not be permitted to work more than 16 hours straight, excluding shift turnover time.
 - b. An individual should not be permitted to work more than 16 hours in any 24 hour period, nor more than 24 hours in any 48 hour period, nor more than 72 hours in any 7-day period, all excluding shift turnover time.

The Specification further required that any deviations from the above guidelines be authorized by the Plant General Manager or his deputy, or higher levels of management, in accordance with established plant procedures and with documentation of the basis for the deviation. AP 0010119, revision 14, "Overtime Limitations for Plant Personnel," implemented this requirement and provided an administrative vehicle for the approval of deviations from the specified guidelines.

Contrary to the above, during the period from May 13 through June 14, 1996, five individuals who performed safety related functions were found to have contributed to 38 deviations from the 72-hour-in-any-seven-day-period requirement, 15 deviations from the 24-hour-in-any-48-hour requirement, and 3 deviations from the 16-hour-in-any-24-hour requirement without obtaining authorization from the Plant General Manager, his deputy, or higher levels of management.

Quality Assurance Audit QSL-PM-96-08



JQQ-96-086

To: J. Scarola Date: July 8, 1996
From: L. W. Bladow Department: JNA/PSL
Subject: Quality Assurance Audit
OSL-PM-96-08

Attached is a summary report for QA Performance Monitoring activities completed during May/June, 1996 to assess the implementation of the Quality Assurance Program at St. Lucie.

The following three findings are documented in this report and have been discussed with appropriate personnel and exited with PSL Plant Management.

Finding 1: Inadequate Procedures for Resin Transfer

- A. The procedure and methods in use during blowdown building resin transfer did not implement the system operating description for Blowdown Building resin discharge as found in the FSAR.
- B. The procedures used to changecout typically non-radioactive resins do not provide adequate radiological controls when the resins are radioactive.
- C. The procedures in use during a Blowdown Building resin transfer were not being completely followed in that several radiological controls were not in place.

Finding 2: Procedure Non-compliances with Requirements for Control of Breathing Air Stations

Contrary to requirements, HP Techs provided bubble hood respiratory protection with air supply pressures that exceeded procedure limits. Neither procedure HP-61 or a usable Table 1 of that procedure were available. BA station BB 029 calibration data posted with the machine was not complete. Other stations (BB003 and BB004) were found with expired calibration stickers and incomplete calibration sheets.

Finding 3: Violation of Overtime Guidelines

- A. During the period 5 through 18 May 96, 12% of the sampled population exceeded one or more of the overtime guidelines.
- B. Overtime deviation requests are not being filled out and forwarded to the vault as required.
- C. Management reviews of overtime guideline adherence are ineffective.



AUDIT REPORT
QSL-PM-96-08
Page 12 of 28

observed to be conducted per established procedural guidelines. Upon satisfactory completion of the PMT per Data Sheet C, QA monitored the performance of the flow tests of the 2C AFW Pump and its valves per Data Sheet D. Activities were accomplished per procedure with satisfactory results.

Performance Monitor: L. Panessa

Services/Engineering/Other

PMON 96-033 was initiated to insure Plant compliance with overtime controls specified in Technical Specifications 6.2.2.f and Administrative Procedure AP0010119, Rev. 14. This evaluation was conducted by reviewing security gate log entries and exits from the protected area for a random sampling of personnel currently badged at the St. Lucie site. Selected personnel were drawn from a population of 16 plant departments and eight different contractor companies all of which have the potential to perform safety related work activities. Individuals examined were selected using a random number generator.

Interviews were conducted with management personnel to examine consistency in understanding and implementation of overtime guidelines. Records of overtime deviation requests were reviewed. Interviews conducted indicate that managers and direct reports are reviewing time sheets each pay period to ensure compliance with overtime guidelines. In addition, personnel have been instructed to report in advance any anticipated overtime that would exceed the guidelines. Management interviews revealed a consistent interpretation of the overtime limits. As currently implemented the overtime policy allows turnover time of 30 minutes before and after each shift in addition to the maximum limits stated in the technical specifications. This understanding is contained in a maintenance memorandum dated 20 April 1992. Other than this Mechanical Maintenance memorandum, other plant wide guidance defining shift turnover time was not located during this audit. Consistent implementation of shift turnover time was not found when time records were reviewed.

The target population contained 1,572 badged personnel. A sample size of 100, 6.4% of the population, was randomly selected. Security gate logs were obtained for the period, 5 through 18 May 96, inclusive. Allowing 30 minutes for a lunch break and applying the previously discussed definition of shift turnover to the criteria in AP0010119, the following maximum thresholds for allowed hours on site were established:

1. No more than 17.5 hours in 24
1. No more than 27 hours in 48
1. No more than 82.5 hours in 7 days
1. An 8 hour break exists between work periods (including shift turnover)

Unit 2 Technical Specification 6.2

ADMINISTRATIVE CONTROLS**6.2 ORGANIZATION (Continued)****UNIT STAFF**

6.2.2 The unit organization shall be subject to the following:

- a. Each on duty shift shall be composed of at least the minimum shift crew composition shown in Table 6.2-1.
- b. At least one licensed Reactor Operator shall be in the control room when fuel is in the reactor. In addition, while the reactor is in MODE 1, 2, 3, or 4, at least one licensed Senior Reactor Operator shall be in the control room.
- c. A health physics technician⁸ shall be on site when fuel is in the reactor.
- d. All CORE ALTERATIONS shall be observed by a licensed operator and supervised by either a licensed Senior Reactor Operator or Senior Reactor Operator Limited to Fuel Handling who has no other concurrent responsibilities during this operation. The SRO in charge of fuel handling normally supervises from the control room and has the flexibility to directly supervise at either the refueling deck or the spent fuel pool.
- e. DELETED
- f. Administrative procedures shall be developed and implemented to limit the working hours of unit staff who perform safety-related functions; e.g., senior reactor operators, reactor operators, health physicists, auxiliary operators, and key maintenance personnel. Adequate shift coverage shall be maintained without routine heavy use of overtime. The objective shall be to have operating personnel work a normal 8-hour day, 40-hour week while the plant is operating. However, in the event that unforeseen problems require substantial amounts of overtime to be used, or during extended periods of shutdown for refueling, major maintenance or major plant modification, on a temporary basis the following guidelines shall be followed:

8

⁸The health physics technician may be less than the minimum requirement for a period of time not to exceed 2 hours, in order to accommodate unexpected absence, provided immediate action is taken to fill the required positions.

ADMINISTRATIVE CONTROLS

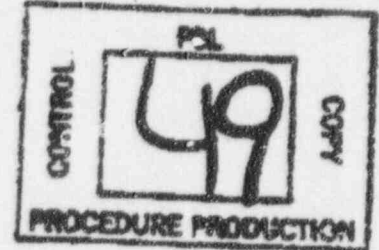
UNIT STAFF (Continued)

- a. An individual should not be permitted to work more than 16 hours straight, excluding shift turnover time.
- b. An individual should not be permitted to work more than 16 hours in any 24-hour period, nor more than 24 hours in any 48-hour period, nor more than 72 hours in any 7-day period, all excluding shift turnover time.
- c. A break of at least 8 hours should be allowed between work periods, including shift turnover time.
- d. Except during extended shutdown periods, the use of overtime should be considered on an individual basis and not for the entire staff on a shift.

Any deviation from the above guidelines shall be authorized by the Plant General Manager or his deputy, or higher levels of management, in accordance with established procedures and with documentation of the basis for granting the deviation. Controls shall be included in the procedures such that individual overtime shall be reviewed monthly by the Plant General Manager or his designee to assure that excessive hours have not been assigned. Routine deviation from the above guidelines is not authorized.

- g. The Operations Supervisor shall hold a Senior Reactor Operator License.

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT
ADMINISTRATIVE PROCEDURE NO. 0010119
REVISION 14



1.0 TITLE:

OVERTIME LIMITATIONS FOR PLANT PERSONNEL

2.0 REVIEW AND APPROVAL:

Reviewed by Facility Review Group _____ 10/31 1980

Approved by J. H. Barrow (for) _____ Plant General Manager _____ 10/31 1980

Revision 14 Reviewed by F R G _____ 5/5 1984

Approved by C. L. Burton _____ Plant General Manager _____ 5/5 1984

3.0 SCOPE:

3.1 This procedure provides administrative requirements and documentation requirements for plant personnel working overtime on safety related functions.

4.0 PRECAUTIONS:

None

5.0 RESPONSIBILITIES:

5.1 The Plant General Manager is responsible for ensuring that the use of overtime is minimized.

5.2 Each department head is responsible to provide necessary work schedules without routine heavy use of overtime.

5.3 Each department head is responsible to follow these instructions and ensure documentation of the basis for use of overtime exceeding the guidelines.

5.4 The Administrative Department is responsible for maintaining updated copies of the plant roster in each Control Room.

FOR INFORMATION ONLY

THIS DOCUMENT IS NOT CONTROLLED. BEFORE USE,
VERIFY INFORMATION WITH A CONTROLLED DOCUMENT.
FLORIDA POWER AND LIGHT CO. ST. LUCIE PLANT

DATE VERIFIED ____/____/____ INITIALS ____

DATE VERIFIED ____/____/____ INITIALS ____

INFORMATION ONLY

S__OPS

DATE _____
DOCT PROCEDURE _____
DOCN 0010119 _____
SYS _____
COMP COMPLETED _____
ITM 14 _____

5PP

St. Lucie Administrative Procedure No. 0010119

ST. LUCIE PLANT
ADMINISTRATIVE PROCEDURE NO. 0010119, REVISION 14
OVERTIME LIMITATIONS FOR PLANT PERSONNEL

6.0 REFERENCES:

- 6.1 Tech Spec Section 6.2.2.1
- 6.2 NUREG 0737 Section I.A.1.3
- 6.3 Administrative Procedure 0010518, "Fitness for Duty Call Out and For Cause Testing."
- 6.4 Nuclear Policy NP-306, Overtime.
- 6.5 St. Lucie Plant Policy, PSL-202, Overtime.

/R14

7.0 RECORDS AND NOTIFICATIONS:

- 7.1 Completed Overtime Deviation Requests shall be maintained in the plant files in accordance with QI 17-PR/PSL-1, "Quality Assurance Records".

INFORMATION ONLY

ST. LUCIE PLANT
ADMINISTRATIVE PROCEDURE NO. 0010119, REVISION 14
OVERTIME LIMITATIONS FOR PLANT PERSONNEL

8.0 INSTRUCTIONS:

- 8.1 Excessive utilization of overtime is counterproductive and is to be avoided.
- 8.2 The nuclear plant personnel in all departments shall be covered by these instructions.

/R14
/R14

NOTE

Nuclear Division personnel should adhere to these limits. Variations from these limits can only be authorized by the Vice President - St. Lucie Plant or his designee in accordance with the requirements of Nuclear Policy NP-306, Overtime.

8.3 Overtime Limit Guidelines:

1. An individual should not be permitted to work more than 16 hours straight, excluding shift turnover time.
2. An individual should not be permitted to work more than 16 hours in any 24-hour period, nor more than 24 hours in any 48-hour period, nor more than 72 hours in any 7-day period, all excluding shift turnover time. An acceptable deviation to this guideline is the STA seven consecutive 12 hour shift schedule.
3. A break of at least 8 hours should be allowed between work periods, including shift turnover time.
4. Except during extended shutdown periods, the use of overtime should be considered on an individual basis and not for the entire staff on a shift.

8.4 Deviations from Overtime Limit Guidelines:

1. Deviation from the overtime guidelines shall be approved by the Vice President - St. Lucie Plant, Plant General Manager, Services Manager.
2. The senior person on site from their respective department shall complete the overtime deviation request (Figure 1) and obtain the necessary approval for personnel specifically outlined in section 8.2 of this procedure. All St. Lucie Plant personnel shall comply with Nuclear Policy Guideline NP-306, Overtime.

INFORMATION ONLY

Typical Copy of Discrepant Time Sheet

Time Report

WES TIME INPUT SCREEN

NO EXCEPTIONS (X)

No.

100

EMPLOYMENT LOCATION

PERIOD PERIOD

PERIOD DATE

101 THIRDMONTH RELEASE SCREEN

REASON FOR RELEASED

DATE RELEASED

REASON FOR RELEASED

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WES ACCOUNT VARIATION SCREEN

NORMAL CHARGE LOCATION

829

WEEK ORDER	SUBJECT	ACCOUNT NO.	CHARGE	REG.	OT
ORDER	SR	DEPT	LOCN	HOURS	MEALS
2802	80	000	02	0	829
2803	80	002	02	0	829
2802	80	003	02	0	829
2802	80	004	02	0	829
2802	80	009	02	0	829
5647	80	000	70	0	829
312	91	000	02	0	915
5834	70	322	00	0	915
TOTALS					13.0

TECH SPEC WORK HOUR TIME LIMITS HAVE BEEN EXCEEDED

REMARKS overtime was worked on the N1 replacement brand

ALL OF THE REGULAR SCHEDULED HOURS WERE WORKED UNLESS

REPORTED AS SUPERSTORY EXCEPT ON HOURS

PREPARED BY

APPROVED BY

PLEASE SIGN

TYPICAL