September 20, 1996

LICENSEE: Florida Power Corporation

FACILITY: Crystal River Unit 3

SUBJECT: SUMMARY OF MEETING ON SEPTEMBER 19, 1996, REGARDING LICENSEE'S PLAN TO IMPLEMENT A GRADED APPROACH TO INSTRUMENT SETPOINT CALCULATIONS

On September 19, 1996, representatives of the Florida Power Corporation, licensee for Crystal River Nuclear Plant, Unit 3 (CR3) met with members of the staff to discuss its plan to implement a graded approach to instrument setpoint calculations. This approach is described in the licensee's letter dated August 20, 1996 to the NRC. Enclosure 1 is a list of attendees. Enclosure 2 contains copies of handouts distributed at the meeting.

The licensee stated that its proposed methodology is only a change in committment and not a change in the CR3 licensing basis. In accordance with the licensee's procedures, the design criteria and specific setpoint calculations using the graded approach will be subjected to 10 CFR 50.59 evaluation. The licensee also stated that it plans to implement this new approach on an as-needed basis. Further, the licensee stated that the technical specification setpoint allowable values will not be changed.

The licensee did not request, and the staff did not make, a determination on the acceptability of this new setpoint methdology. The staff, however, stated that the licensee's submittal and the staff's safety evaluation associated with CR3 license amendment no. 152 address the licensing basis for setpoint methodology. The staff also reiterated that 10 CFR 50.59 provides a process for licensees to make changes to the facility.

The meeting did not result in any regulatory actions.

Original signed by
L. Raghavan, Project Manager
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-302
Enclosures: 1. Attendance List
2. Handouts
cc: See next page

Distribution

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Date	09/20/96	09/20/96	09/20/96		
Copy	Yes/No	Yes/No	Yes/No		

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FPC/NRC Meeting

SEPTEMBER 19, 1996

List of Attendees

Name	Office
J. Mauck	NRC/NRR
E. Marinos	NRC/NRR
F. Hebdon	NRC/NRR
L. Raghavan	NRC/NRR
P. Tanguay	Florida Power
J. Maseda	Florida Power
K. Wilson	Florida Power
B. Gutherman	Florida Power
A. Friend	Florida Power
C. Schulten	NRC/NRR
S. Athavale	NRC/NRR
H. Garg	NRC/NRR
I. Ahmed	NRC/NRR
S. Ninh	NRC/NRR
S. Koleff	Florida Power
S. Malak	Sargent & Lundy
W. Barasa	Sargent & Lundy

ENCOLSURE 1

FPC and NRC Meeting

Methodology for Instrument Uncertainty Determination

September 19, 1996

Agenda

I. Introduction/Purpose

II. Background

III. Graded Approach

IV. Summary

V. Discussion

Introduction / Purpose

Discuss

- CR - 3 Instrument Uncertainty Determination Program, and
- Details of the methodology

Background

- The CR-3 Licensing Basis does not include RG 1.105, ISA 67.04 or an approved topical report or other setpoint program description
- Original setpoints were developed using statistical methods consistent with common industry practice
- Review of 18 to 24 months surveillance requirement extension identified issues/concerns that led to an escalated enforcement
- Implementing procedures were not adequately tied to calculations.

Background - cont.

- FPC Commitments made to Enforcement:
  - Complete calcs. for RPS, EFIC & ESAS using ISA 67.04 Part II
  - Categorize Improved Technical Specifications (ITS) values
  - ISA 67.04 Part II used for the two most significant categories of calculations
  - Enhance calculation/procedure relationship

Background - cont.

- Calculation results had the following effects:
  - Reduced operating margin
  - Increased potential to challenge safety systems
  - Restricted the use of important mitigation strategies in the EOPs
- These effects resulted in the need to develop a graded approach

Graded Approach

"Overly conservative setpoints can be restrictive to plant operation and reduce safety by unnecessarily increasing the frequency of safety system actuation." *

* Reference ISA 67.04, Part II, Sect. 4

Graded Approach - Definition

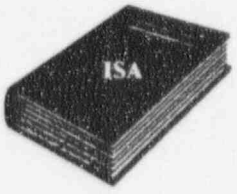
- A methodology:
  - ➢ for defining a classification scheme based on instrument function, and
  - ➢ to establish a method to determine the appropriate level of rigor to be used in channel uncertainty determinations.

Graded Approach

Benefits

- Realistic estimation of instrument uncertainty
- Consistent methodology in determining setpoints in channel uncertainty
- Consistent with evolving industry standards

Standards Used



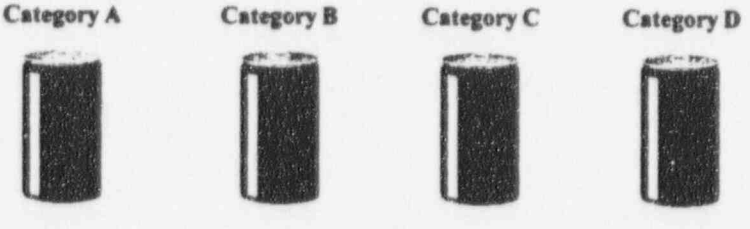
- References:
  - ISA-67.04, Part II
  - ISA-dTR67.04.03, "Indication Uncertainties and Their Relationship With Indicated Values"
  - ISA-dTR67.04.09, "Graded Approach to Setpoint Determination"

Graded Approach

- Reviewed other utilities programs
- Developed CR-3 program as a team with industry consultants (Sargent & Lundy)
- Diverse experience from in-house resources

Graded Approach Program

4 Key Categories



Graded Approach

Category A

- Category A - Actuation setpoints for:
  - Reactor Protection System (RPS)
  - Emergency Safeguards Actuation System (ESAS)
  - Emergency Feedwater Initiation & Control (EFIC)

Graded Approach

Category B

- Category B
  - A value which is directly used in applicable safety analysis
  - A value/indication relied upon for the manual performance of an accident mitigation function.
  - A value relied upon to maintain the reactor in a safe shutdown condition, maintain the integrity of the safety related pressure boundary, or prevent exceeding 10CFR100 limits.
  - A value relied upon to protect or support operation of equipment required for design basis accident mitigation.

Graded Approach

Category C

- Category C
  - Other actuation's, alarms, indications or control settings relied upon for continued operation and equipment protection, excluding items classified as Category D.
  - Values derived from commitments in the Licensing Basis (including Technical Specification) not classified in Category A or B and which cannot be appropriately treated as a Category D or nominal values.
  - Reg. Guide 1.97 Type B, C, and D variables.

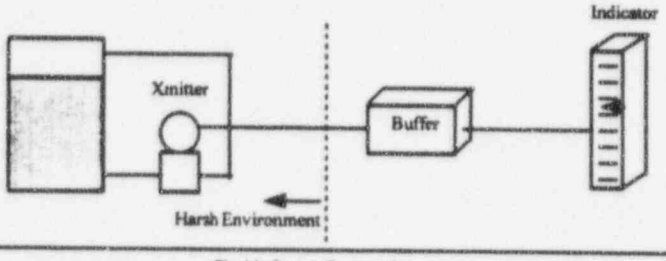
Graded Approach

Category D

- Category D
  - Vendor supplied equipment.
  - Reg. Guide 1.97 Type E variables.
  - Other values not meeting the criteria of Category A, B, or C.
  - Values derived from commitments in the Licensing Basis (including Technical Specifications) not classified in Category A, B, or C and which can be appropriately treated as nominal values with engineering judgment.

Graded Approach

- Example Uncertainties ...
  - Mfg. Tolerances
  - Test Equipment
  - Readability
  - Normal temp. effects
  - Accident temp. effects
  - Radiation effects
  - Normal process errors
  - Accident process errors
  - IR effects (Bias)
  - Static Pressure effects (Bias)



Graded Approach Equations

Category A: $\sqrt{\sum(\text{Random Errors})^2} + \text{All Process Errors} + \text{All Biases}$

Category B: $\sqrt{\sum(\text{Rand. Err.})^2 + (\text{Norm. Proc. Err.})^2} + \text{Accident Process Errors} + \text{All Biases}$

NOTE: 1/3 * MTE and As Left tolerances will not be accounted for

Category C: $2/3 * \left[\sqrt{\sum(\text{Rand. Err.})^2 + (\text{Norm. Proc. Err.})^2} + \text{Accident Process Errors} + \text{All Biases}\right]$

NOTE: As Left tolerances will not be accounted for

Category D: Engineering Judgment

- Calcs. being performed using Graded Approach methodology
- Implementation will proceed following this meeting
  - ➢ Issuance of I&C Design Criteria (which will include the Graded Approach)
  - ➢ 50.59 is done during calc. revision and as part of the procedure revisions that incorporate calc. results.