

PROPOSED TECHNICAL SPECIFICATIONS CHANGES

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## INSTRUMENTATION

### INCORE DETECTORS

#### LIMITING CONDITION FOR OPERATION

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3.3.3.2 The incore detection system shall be OPERABLE with:

- a. At least 75% of all incore detectors\* with at least one incore detector in each quadrant at each level, and
- b. At least 75% of all incore detector locations\*, and
- c. Sufficient operable incore detectors to perform at least six tilt estimates with at least one tilt estimate at each of three levels.

An OPERABLE incore detector location shall consist of a fuel assembly containing either a fixed detector string with a minimum of three OPERABLE rhodium detectors or an OPERABLE movable incore detector capable of mapping the location.

A tilt estimate can be made from two sets of symmetric pairs of incore detectors. Two sets of symmetric pairs of incore detectors are formed by two pairs of diagonally opposite symmetric incore detectors, one incore detector per quadrant.

**APPLICABILITY:** When the incore detection system is used for monitoring the AZIMUTHAL POWER TILT, radial peaking factors, local power density or DNB margin.

#### **ACTION:**

With the incore detection system inoperable, do not use the system for the above applicable monitoring or calibration functions. The provisions of Specifications 3.0.3 are not applicable.

#### SURVEILLANCE REQUIREMENTS

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4.3.3.2 The incore detection system shall be demonstrated OPERABLE:

- a. By performance of a CHANNEL CHECK within 24 hours prior to its use and at least once per 7 days thereafter when required for monitoring the AZIMUTHAL POWER TILT, radial peaking factors, local power density or DNB margin.
- b. At least once per 18 months by performance of a CHANNEL CALIBRATION operation which exempts the neutron detectors but includes all electronic components. The neutron detectors shall be calibrated prior to installation in the reactor core.

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\* For the remainder of Fuel Cycle 10 the incore detection system may be considered OPERABLE with <75% and ≥50% of all incore detectors and detector locations provided the appropriate penalties (based on a full 1.0% increase in overall uncertainty on the CECOR  $F_{xy}$  measurement) are applied to the COLSS and CPCs.

MARKUP OF CURRENT ANO-2 TECHNICAL SPECIFICATIONS

(FOR INFO ONLY)

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\* For the remainder of fuel Cycle 10 the incore detection system may be considered OPERABLE with <75% and ≥50% of all incore detectors and detector locations provided the appropriate penalties (based on a full 1.0% increase in overall uncertainty on the CECOR  $F_{AV}$  measurement) are applied to the COLSS and CPCs.



Entergy Operations, Inc.  
Arkansas Nuclear One - Unit 2  
September 21, 1993  
A-93-026

Mr. F. T. Philpott  
Entergy Operations, Inc.  
Arkansas Nuclear One  
P. O. Box 608  
Russellville AR 72801

Subject: ANO-2 Cycle 10 COLSS and CPCS Addressable Constants for a Reduced  
Number of Operable Incore Detectors

Dear Mr. Philpott:

This letter provides revised COLSS and CPCS addressable constants and COLSS database constant K09 for ANO-2 Cycle 10 based on an analysis assuming a reduction in the Technical Specification 3.3.3.2 minimum percent operable incore detector locations from 75% to a value as low as 50%. The information provided in this letter has been verified in accordance with ABB Combustion Engineering Nuclear Fuel Quality Assurance procedures.

The revised COLSS and CPCS constants are provided in Enclosure 1. Enclosure 1 also contains a Software Media Transfer Form to be signed and returned to M. A. Book at ABB Windsor. Enclosure 2 contains supporting information, including an administrative procedure change, for the proposed Technical Specification change and a marked up copy of the proposed new Technical Specification.

The information provided in this letter supercedes that provided, based on engineering judgement, in Reference 1. As expected, the information provided in Reference 1 has been shown to have excess conservatism.

If you have any questions on the contents of this letter, please contact me or Mr. Sasan Etemadi at (203) 285-3647.

Sincerely,  
COMBUSTION ENGINEERING, INC.

*J. D. Young for DRE*  
D. R. Earles  
Project Manager, Nuclear Fuel

ABB Combustion Engineering Nuclear Power

- Enclosures:
1. COLSS and CPCS Addressable Constants for Reduction of Operable Incore Detectors
  2. Proposed Changes to Incore Detector Technical Specification
- Reference:
1. D. R. Earles to F. T. Philpott, "Reduction of the Number of Operable Incore Detectors for ANO-2 Cycle 10," A-93-027, September 16, 1993.

xc:

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