



August 2, 2012 (3:45 pm)

OFFICE OF SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFF

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NUCLEAR GENERATION DIVISION

August 2, 2012

Secretary  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001  
ATTN: Rulemakings and Adjudications Staff

**Subject:** Industry Comments on Petition for Rulemaking: In-core Thermocouples at Different Elevations and Radial Positions in Reactor Core (NRC-2012-0056)

**Project Number: 689**

On behalf of the nuclear energy industry, the Nuclear Energy Institute (NEI)<sup>1</sup> appreciates the opportunity to provide comments on the subject petition for rulemaking: In-core Thermocouples at Different Elevations and Radial Positions in Reactor Core (PRM-50-105; ML12065A215). The petitioner requests that the NRC amend its regulations to "require all holders of operating licenses for nuclear power plants ("NPP") to operate NPPs with incore thermocouples at different elevations and radial positions throughout the reactor core."

The NRC should not amend its regulations to require all holders of operating licenses to operate nuclear power plants with incore thermocouples at different elevations and radial positions throughout the reactor core. Use of incore thermocouples would result in higher dose to workers both to implement plant modifications and to maintain the proposed system with minimum if any benefit to plant safety. In some designs, incore thermocouples could be more susceptible to failures and misdiagnosis than core exit thermocouples (CET) because of proximity to thermal and radiation sources.

The petitioner provides no basis that actions taken by operators would be more effective than actions taken based on existing CETs. Specifically, there is no evidence to show that temperatures sensed at a single core location could be used more effectively than actions based on average CET temperatures.

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<sup>1</sup> NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, materials licensees, and other organizations and individuals involved in the nuclear energy industry.

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DS10

The proposed additional instrumentation is relevant only to postulated core conditions where CETs indicate some small amount of sub-cooling while incore thermocouples might indicate locally higher temperatures with less sub-cooling. Where CET sub-cooling is minimal, operators are trained to take action to increase this margin. Existing procedures and a predetermined CET value concurrently provide adequate indication for plant operators to transition from emergency operating procedures (EOPs) to implementing severe accident management guidelines (SAMGs).

The petitioner asserts that, in the event of a severe accident, incore thermocouples would provide nuclear power plant operators with "crucial information to help operators manage the accident." Operators are trained to recognize off-normal operating conditions that have potential for resulting in core damage and to maneuver the plant to a more conservative operating envelope. In a severe accident, operator strategies control parameters across large regions of the core or across the entire core. The additional information provided by incore thermocouples would not change the steps and actions available to operators to maintain or restore adequate core cooling conditions.

If you have any questions, please feel free to contact me at [gac@nei.org](mailto:gac@nei.org) or (202) 739-8086.

Sincerely,

A handwritten signature in black ink, appearing to read 'Gordon A. Cleffton', with a long horizontal flourish extending to the right.

Gordon A. Cleffton

## Rulemaking Comments

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**From:** CLEFTON, Gordon [gac@nei.org]  
**Sent:** Thursday, August 02, 2012 3:01 PM  
**Subject:** Industry Comments on Petition for Rulemaking: In-core Thermocouples at Different Elevations and Radial Positions in Reactor Core (NRC-2012-0056)  
**Attachments:** 08-02-12\_NRC\_Comments on In-core Thermocouples at Different Elevations and Radial Positions in Reactor Core.pdf

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