

10 CFR 50.55a

RS-05-178

December 16, 2005

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555-001

Clinton Power Station, Unit 1  
Facility Operating License No. NPF-62  
NRC Docket No. 50-461

Subject: Revision to the Reactor Core Shroud Repair Design Specification

Reference: Letter from Patrick R. Simpson (AmerGen Energy Company, LLC) to U. S. NRC, "Reactor Core Shroud Repair Relief Request," dated March 15, 2005

In the referenced letter, AmerGen Energy Company, LLC (AmerGen) requested approval of a core shroud repair alternative in lieu of the repair approach specified in the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components." The request was made in accordance with 10 CFR 50.55a, "Codes and standards," paragraph (a)(3)(i) on the basis that the proposed alternative provides an acceptable level of quality and safety. This alternative approach utilized the methodology presented in the Boiling Water Reactor Vessel Internals Project report BWRVIP-02, "BWR Core Shroud Repair Design Criteria," Revision 2.

BWRVIP-02, paragraph 5.3.1.1 limits the displacement at cracked shroud welds such that a floodable volume is maintained in the event of a recirculation pipe loss of coolant accident (LOCA). The proposed repair design meets this requirement by maintaining overlap between potentially deflected core shroud sections. Attachment 2 of the referenced letter provided General Electric (GE) Report GENE-0000-0023-6259-05P, "Clinton Power Station BWRVIP-04A Core Shroud Repair Design Submittal," Revision 1 and Report GENE-0000-0023-6259-04P, "GE Input to 10CFR50.59 Evaluation by CPS," Revision 0. Page 24, and Pages 10 and 11 of these reports, respectively, state the mechanical stops limit the horizontal displacement to one half of the shroud wall thickness. This displacement limitation ensures shroud sections overlap, thereby preventing post event leakage and ensuring a floodable volume for core cooling.

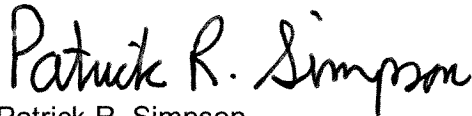
In order to accommodate potential clearance increases between the shroud and the limit stop contact area, which may arise during installation, a change to the core shroud repair design specification has been made. The design specification change involves the amount of overlap required to ensure post event leakage does not prevent core cooling. The

change in the design specification results in a different criterion than was stated in the GE report pages indicated above.

The revised design specification limits the horizontal displacement across any failed shroud circumferential weld boundary between H3 and H7 welds to (1) 0.67 times the shroud wall thickness in the directions of the limit stops, or (2) a maximum of 0.95 times the shroud thickness for displacement directions at 45 degree azimuths between two adjacent limit stops. The increased design specification displacement limit remains within BWRVIP-02 requirements in that overlap is maintained to ensure a floodable volume during the LOCA events while not impacting control rod insertion.

If you have any questions concerning this letter, please contact Mr. David Gullott at (630) 657-2819.

Respectfully,

A handwritten signature in black ink that reads "Patrick R. Simpson". The signature is written in a cursive style with a large initial "P".

Patrick R. Simpson  
Manager – Licensing