

October 9, 2007

Glen R. Mills
P.O. Box 3393
Mission Viejo, CA 92690

SUBJECT: Digital Instrumentation and Controls Technology

Dear Mr. Mills:

By letter dated August 21, 2007, you submitted information expressing concern with the deployment of digital instrumentation and controls technology in nuclear power plants. Your letter states that past digital upgrades have had mixed results, with some failures, and that these failures present a risk to the public health and safety. Furthermore, you requested that all future digital upgrade efforts be terminated.

For systems involving plant safety, the Nuclear Regulatory Commission requires high quality. This standard applies to digital safety systems as well, and the staff reviews the design attributes for these systems to ensure that high quality. The NRC has found that operating experience with digital I&C applications do not present any additional or more severe failures than with current analog technologies. Furthermore, digital safety systems have been found to be highly reliable, and requirements for diversity and defense-in-depth of digital reactor protection systems have ensured that in the unlikely event of a safety system failure, the public health and safety will not be compromised. The requirements for high quality digital systems are found in various industry standards and in the Regulatory Guides endorsing those standards. In addition, the NRC staff is in the process of communicating to the industry the methods to be used by licensees to meet the requirements for digital systems, and this additional information will assist licensees in making sure any future safety related digital system meets NRC regulatory requirements. This additional guidance can be found at <http://www.nrc.gov/reading-rm/doc-collections/isg/digital-instrumentation-ctrl.html>.

Sincerely,

/RA/

Patrick Hiland, Director
Division of Engineering
Office of Nuclear Reactor Regulation
Nuclear Regulatory Commission

cc:

James E. Dyer
James T. Wiggins
John A. Grobe
Bruce A. Boger
Matthew A. Mitchell
George A. Mulley
David J. Vito

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