



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

November 2, 2017

Dr. Dennis C. Bley, Chairman  
Advisory Committee on Reactor Safeguards  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

SUBJECT: INTERIM LETTER: CHAPTERS 7 AND 18 OF THE U.S. NUCLEAR REGULATORY COMMISSION STAFF'S SAFETY EVALUATION REPORT WITH OPEN ITEMS RELATED TO THE CERTIFICATION OF THE ADVANCED POWER REACTOR 1400 DESIGN

Dear Dr. Bley:

Thank you for your interim letter dated September 25, 2017, regarding the safety evaluation report with open items (OIs) associated with Chapters 7 and 18 of the Advanced Power Reactor 1400 (APR1400) design certification application. As discussed during the 646<sup>th</sup> meeting of the Advisory Committee on Reactor Safeguards (ACRS), on September 7–8, 2017, the U.S. Nuclear Regulatory Commission staff is currently working to resolve the OIs associated with the review of these chapters.

We appreciate your review and conclusions regarding Chapter 18. Regarding your conclusions and recommendations on Chapter 7, the staff has the following feedback.

1. The staff should ensure that a detailed explanation of operation of the Common Q™ PM646 watchdog timer (WDT) functions is provided to clarify how division to division voting independence is not compromised.

The staff agrees with the ACRS's recommendation and is working with the applicant to resolve this recommendation concerning the WDT functions. The staff recently issued a request for additional information (RAI), which requested that the applicant address the information presented in Nuclear Safety Advisory Letter 17-2 and how it affects the APR1400 design certification application. The staff will keep the ACRS informed of the applicant's response to this RAI and the staff's resolution of the issue.

2. The staff should ensure that a detailed description of the one-way, hardware-based data diode (not controlled or configured by software) is provided to demonstrate complete isolation from external communications.

The staff agrees with the ACRS's recommendation with respect to demonstrating isolation from external communications and has addressed this issue through an RAI. The applicant provided sufficient information in its RAI response to demonstrate that the interface between instrumentation and control systems to external interfaces is equivalent to a one-way, hardware-based data diode and is sufficient to demonstrate adequate isolation from external communications. This device or the interface is not

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controlled or configured by software. The applicant has updated applicable licensing basis documents to incorporate this information.

The staff looks forward to continued interactions with ACRS, and will provide any updates or new information during its briefing on the Advanced Safety Evaluation Report in April 2018.

Sincerely,

***/RA Michael R. Johnson acting for/***

Victor M. McCree  
Executive Director  
for Operations

Docket No.: 52-046

cc: Chairman Svinicki  
Commissioner Baran  
Commissioner Burns  
SECY

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