



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
WASHINGTON, DC 20555 - 0001**

March 7, 2019

Ms. Margaret M. Doane  
Executive Director for Operations  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

**SUBJECT: EDO RESPONSE TO ACRS LETTER OF SEPTEMBER 26, 2018 ON  
CHAPTERS 7 AND 8 OF THE NRC STAFF'S SAFETY EVALUATION REPORT  
WITH OPEN ITEMS RELATED TO THE CERTIFICATION OF THE NUSCALE  
SMALL MODULAR REACTOR**

Dear Ms. Doane:

During the 660<sup>th</sup> meeting of the Advisory Committee on Reactor Safeguards, February 6-8, 2019, we reviewed the NRC staff's October 30, 2018 letter regarding disposition of the conclusion and recommendations in our NuScale letter of September 26, 2018, on Chapters 7 and 8 of the staff's safety evaluation report with open items related to the certification of the NuScale small modular reactor.

Our Recommendation 2 stated:

The staff should ensure that the unidirectional communication interfaces labeled on Figure 7.0-1 in Chapter 7 of NuScale's design certification application as "PCS Unidirectional Data Diode" and "MCS Unidirectional Data Diode" are one-way, hardware-based devices that neither use nor are configured by software to demonstrate complete isolation from external communications.

On October 24, 2018, NuScale submitted mark-ups of Chapter 7 of the Design Certification Application (DCA) that will be included in a future revision as documented in NuScale letter LO-1018-62193. This provided additional clarifications to the Chapter 7 sections in question; specifically, the mark-ups clarify the design of one-way deterministic isolation devices. The clarifications indicate that the one-way deterministic isolation device between the module control system (MCS) and plant control system (PCS) to the plant network (Figure 7.0-1) transmits network traffic from the MCS and PCS to the plant network in one direction only, which is enforced in the hardware design, not software. No software configuration or misconfiguration will cause the boundary device to reverse the direction of data flow.

Our Recommendation 2 in our September letter will be resolved when these proposed changes to the DCA are incorporated into a future revision of Chapter 7, as the NuScale October 24, 2018 letter indicates.

Sincerely,

**/RA/**

Peter C. Riccardella  
Chairman

## **REFERENCES**

1. U.S. Nuclear Regulatory Commission, "Chapter 7, 'Instrumentation and Controls,' and Chapter 8, 'Electric Power' of the U.S. Nuclear Regulatory Commission Staff's Safety Evaluation Report with Open Items Related to the Certification of the NuScale Power, LLC Small Modular Reactor," October 30, 2018 (ML18275A389).
2. Advisory Committee on Reactor Safeguards, "Interim Letter: Chapters 7 and 8 of the NRC Staff's Safety Evaluation Report with Open Items Related to the Certification of the NuScale Small Modular Reactor," September 26, 2018 (ML18270A374).
3. NuScale Power, LO-1018-62193, "NuScale Power, LLC Submittal of Changes to Final Safety Analysis Report, Section 7.0, 'Instrumentation and Controls – Introduction and Overview,' and Section 7.2, 'System Features'," October 24, 2018 (ML18298A222).

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