

April 6, 2020

Docket No. 52-048

U.S. Nuclear Regulatory Commission  
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**SUBJECT:** NuScale Power, LLC Submittal of Presentation Materials Entitled “ACRS Full Committee Presentation: NuScale Topic – Hydrogen/Oxygen Monitoring,” PM-0420-69518, Revision 0

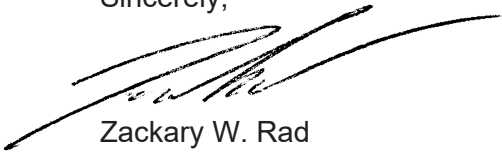
The purpose of this submittal is to provide presentation materials to the NRC for use during the upcoming Advisory Committee on Reactor Safeguards (ACRS) NuScale Full Committee Meeting on April 8, 2020. The materials support NuScale’s presentation of hydrogen/oxygen monitoring.

The enclosure to this letter is the nonproprietary presentation entitled “ACRS Full Committee Presentation: NuScale Topic – Hydrogen/Oxygen Monitoring,” PM-0420-69518, Revision 0.

This letter makes no regulatory commitments and no revisions to any existing regulatory commitments.

If you have any questions, please contact Matthew Presson at 541-452-7531 or at [mpresson@nuscalepower.com](mailto:mpresson@nuscalepower.com).

Sincerely,



Zackary W. Rad  
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Enclosure: “ACRS Full Committee Presentation: NuScale Topic – Hydrogen/Oxygen Monitoring,” PM-0420-69518, Revision 0

**Enclosure:**

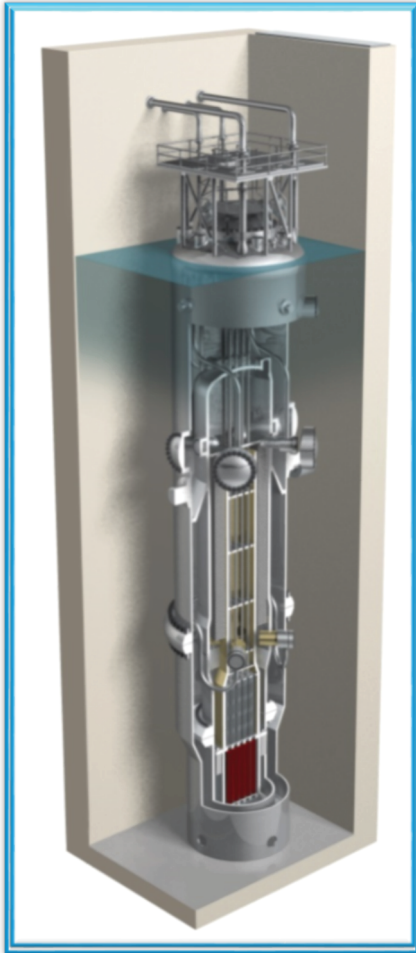
ACRS Full Committee Presentation: NuScale Topic – Hydrogen/Oxygen Monitoring,”  
PM-0420-69518, Revision 0

NuScale Nonproprietary

# ACRS Full Committee Presentation

## NuScale Topic Hydrogen/Oxygen Monitoring

April 8, 2020



PM-0420-69518  
Revision: 0

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# Presenters

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**Matthew Presson**  
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# Summary and Conclusions

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- Core damage accident is a beyond design basis accident
  - Consistent with industry practice, allows nonsafety-related SSCs
  - A NuScale core damage accident is low frequency
- Bounding analyses shows there is a minimum of 72 hours before containment can be threatened
- Decision to place system into service would include precautions and follow RG 1.7 risk-informed process
  - There is sufficient time to inspect and evaluate system condition
  - If leaks develop, can isolate and repair
- Monitoring path can withstand combustion events
- Containment is well-mixed and representative sampling is required

# Containment Isolation Failure

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- Chapter 19 documents an assessment of whether a severe core damage event with a containment failure could lead to a large release
- The conclusion is that “at the earliest possible time of fuel-coolant interaction (FCI), the airborne fraction of volatile fission product aerosols is less than the calculated threshold for a large release.”
  - 6.8 hours is the earliest possible time of FCI for intact containment accidents
- Under the bounding assumption that the containment evacuation system (CES) piping were to be completely sheared at the time of unisolation, it is reasonable to conclude this event would not result in a large release or threaten public safety

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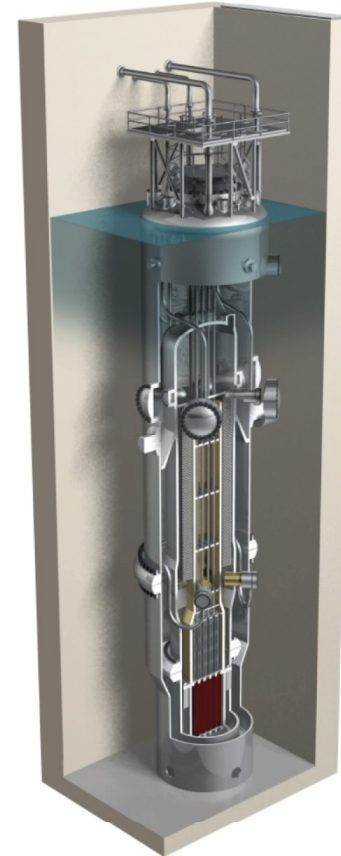
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