Discussion Topics for May 8, 2019, Public Teleconference on Post-Accident Sampling Exemption Request for NuScale

1. In the letter for the AST FSAR changes, NuScale indicates that they plan to incorporate additional FSAR changes associated with hydrogen and oxygen monitoring questions raised during the April 9, 2019 meeting.
    a. Please provide additional detail regarding the information that NuScale plans to provide on May 23, 2019. Staff is particularly interested in NuScale's capability of safely establishing and continuously monitoring hydrogen and oxygen in the containment post-accident.
    b. Does NuScale plan to provide any additional information regarding the dose a worker will receive to establish monitoring.

2. During the April 9, 2019 meeting, NuScale indicated that the 10 CFR Part 20 dose limits would not apply to sampling contingency plans. Please provide additional information justifying why 10 CFR Part 20 limits do not apply to post-accident sampling.

3. Which dose criteria does NuScale believe would be applicable to a worker performing the actions necessary to perform hydrogen and oxygen monitoring? If the dose criteria, is greater than the dose limits in 10 CFR Part 20, please justify the response.

4. 10 CFR 50.44(c)(4) requires that equipment must be provided for monitoring hydrogen and oxygen in the containment and that the equipment must be functional, reliable, and capable of continuously measuring the concentrations of hydrogen and oxygen following significant beyond design-basis accidents. Regarding post-accident monitoring, during the April 9, 2019 meeting NuScale indicated that they had not performed a dose analysis and they were unsure if a worker would stay within 5 Rem when performing actions necessary for post-accident hydrogen and oxygen monitoring. However, during a December 2018 meeting NuScale informed separate NRC staff that the actions necessary to perform post-accident hydrogen and oxygen monitoring could be performed within 10 CFR Part 20 limits.
    a. Due to the apparent conflicting information, please clarify if NuScale has performed an analysis to calculate the radiation dose to a worker performing post-accident monitoring.
    b. If so, please provide the results and the time post-accident at which this radiation dose occurs.
    c. If a dose assessment of the actions necessary to perform monitoring of hydrogen and oxygen has not been performed, please clarify how a conclusion can be made that the design provides the capability to perform hydrogen and oxygen monitoring.

5. In order to demonstrate the capability to monitoring hydrogen and oxygen in accordance with 10 CFR 50.44(c)(4), please provide a discussion of the actions necessary to establish post-accident hydrogen and oxygen monitoring and the equipment necessary to perform monitoring, include in the discussion the locations in the plant a worker must visit to perform these actions, such as valves that need to be manipulated (as necessary, include in the discussions any actions necessary to prevent the spread or release of accident radiological material, such as closing valves to the building ventilation system). If any post-accident dose information is available, discuss any potential radiation dose concerns or why radiation exposure is not a concern.

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6. What is the proposed system alignment for post-accident monitoring where the gas is pumped through the monitoring system and back to containment?

7. NuScale's design for post-accident hydrogen and oxygen monitoring is based on establishing monitoring as early as 24 hours and no later than 72 hours post-accident, utilizing the CES and the CFDS systems. Discuss how electric power would be available to establish and maintain monitoring.

8. Section 2.7 of the Combustible Gas Control technical report states "the hydrogen and oxygen monitoring equipment is designed to be functional, reliable, and operable in DBE and BDBE environmental conditions." What equipment survivability characteristics are applied to the supporting equipment (piping, pumps, valves, etc.) to ensure the equipment will operate under post-accident monitoring conditions?