NC STATE UNIVERSITY

Nuclear Reactor Program
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October 15, 2024

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

SUBJECT: REPLY TO A NOTICE OF VIOLATION 05000297/2024202-1
LICENSE NO. R-120
DOCKET NO. 50-297

Dear Mr. Tate:

We are in receipt of your letter dated September 16th, 2024 and the enclosed notice of violation (NOV) and inspection report.

In the enclosed Level IV NOV, it is stated that *"contrary to TS section 6.4.g, NCSU's emergency procedures did not contain necessary information to ensure that emergencies involving the reactor could be classified in accordance with the requirements of the emergency plan."*

Emergency Procedure 4 (EP-4) attachment 1 "Emergency Action Levels" (EAL) and Emergency Procedure 10 (EP-10) consolidate the EAL criteria for airborne release under normal ventilation using conservative assumptions of no exhaust dilution, therefore EAL criteria relevant to all four possible exhaust configurations are included in EP-4 and EP-10, satisfying the requirements of the Emergency Plan. The EAL criteria included in the latter document include higher limits for airborne effluent concentrations under conditions of normal ventilation with dilution than those described in EP-4. Furthermore, EP-4 Sec. 4.0 states that: "Emergency classification is based on those EAL criteria given in the Emergency Plan and this procedure." When implemented according to the procedure, the criteria described in the Emergency Plan would be used when applicable. When implemented incorrectly (without reference to the Emergency Plan), it is possible that an emergency is either declared prematurely or is classified conservatively.

The premature declaration or conservative classification of an emergency was cited in discussion with the NRC inspectors as having the potential to degrade the effectiveness of the Emergency Plan. When asked for clarification, the inspectors communicated their understanding that hazards to the general public associated with protective actions, such as traffic during area evacuations, could create unnecessary risk in the event of such conservative assessments. However, the effected EALs are not of a severity which might require evacuation beyond the operations or site boundary. EP-10 Sec. 4.0 reiterates this point, stating: "Evacuation of surrounding areas is not required since doses attributed to airborne effluent release during postulated accidents are well below the Protective Action Guides (PAG) values, therefore, Protective Action Recommendations (PAR) are not applicable to the PULSTAR reactor." This is echoed in Emergency Plan Sec. 6, which states: "PAG are not exceeded in the event of the MHA or other postulated accidents." Therefore, EAL classification does not result in or affect the decision to evacuate members of the public beyond the site boundary.

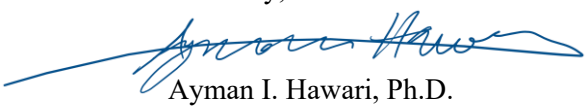
While NC State recognizes the potential for improvements to the affected procedures with the intent of clarifying the identified ambiguities, we maintain that the Emergency Plan is fully implemented by the current Emergency Procedures in compliance with TS Sec. 6.4.g. The conservative notification of response resources should be consistent with general expectations regarding radiological safety and the principles of ALARA. The consequences of conservative emergency classification are minimal, have no safety significance at the PULSTAR, and thus do not result in the degradation of the effectiveness of the Emergency Plan. Therefore, we cordially request that NRC reconsider and rescind the NOV (05000297/2024202-1) issued in this regard.

Nonetheless, the Nuclear Reactor Program has initiated procedure changes for EP-4 (CN 0890) and EP-10 (CN 0891) to clarify reference EAL criteria and support the determination of release rate and off-site dose from airborne effluent during emergencies while taking credit for exhaust dilution while in normal confinement, as described in the Emergency Plan. These procedure changes will be presented to the Reactor Safety and Audit Committee for review and approval at their next quarterly meeting before final implementation.

Since 1972, the NRP has operated the PULSTAR reactor with full adherence to established regulations and according to the highest safety and security standards and will always continue to do so.

I declare under penalty of perjury that the forgoing is true and correct. Executed on 15 October 2024.

Sincerely,



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