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NUCLEAR ENERGY INSTITUTE

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September 22, 2000

Ms. Annette Vietti-Cook
Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Subject: NRC Request for Public Comments on the Union of Concerned Scientists Petition of Rulemaking (65FR42305, July 10, 2000)

Dear Ms. Vietti-Cook

Enclosed are the Nuclear Energy Institute's[1] comments on the Union of Concerned Scientists Petition for Rulemaking that was published in the July 10, 2000, *Federal Register*.

The Union of Concerned Scientists reviewed the Hatch Nuclear Plant license renewal application and alleged in a 10 CFR 2.206 petition filed on May 13, 2000, that the liquid and gaseous radwaste systems are being operated outside their licensing and design bases. The petition documents two contentions and requests the Commission to amend the regulations contained in 10 CFR Part 51 and Part 54.

In summary, the NRC should deny the request to amend the license renewal regulations based on the following:

The design and licensing basis of the liquid and gaseous radwaste systems are sufficiently conservative such that the required analyses demonstrate that the assumed catastrophic failure of components in the systems will result in doses substantially below 10 CFR Part 100 guidelines and consistent with 10 CFR Part 20 guidelines. In other words, the radiological inventory in these systems is controlled and limited, and a postulated event or malfunction will not adversely impact public health or safety. Thus, there is no safety benefit to including these systems within the scope of license renewal for either aging management reviews (Part 54) or environmental impacts (Part 51).

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[1] NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, materials licensees, and other organizations and individuals involved in the nuclear energy industry.

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In addition, we note that the NRC, in a June 20, 2000, letter to the petitioner, found no evidence to support the assertion that the liquid and gaseous radwaste systems at Hatch Nuclear Plant were being operated outside of their design and licensing basis. However, the NRC staff forwarded to the licensee all of the questions posed in the petition as a request for additional information. We believe this request was unwarranted based on the specious nature of the petition.

If there are any questions on our comments please contact Doug Walters at 202.739.8093 or by e-mail at djw@nei.org.

Sincerely,

Anthony R. Pietrangelo

Nuclear Energy Institute
Comments on UCS Petition to Amend
10 CFR Part 54 and Part 51

Background

The Union of Concerned Scientists (UCS) reviewed the Hatch Nuclear Plant license renewal application and contends that the liquid and gaseous radwaste systems are degrading and not being properly maintained. The UCS further contends that because the systems are not being maintained, they are being operated outside their design and licensing bases.

These contentions are documented in a 10 CFR 2.206 petition the UCS filed May 13, 2000. In addition to the contentions, the petition also included a request that the Commission amend the license renewal regulations, 10 CFR Part 54 and Part 51. The NRC noticed the receipt of the petition in the July 10, 2000 Federal Register and requested public comments by September 25, 2000. The Federal Register notice focuses principally on the UCS request to amend the license renewal regulations. However, the justification for the rule changes is embedded in the other elements of the petition.

Further, while the genesis of the petition is the Hatch license renewal application, the UCS believes the contentions may be applicable to all nuclear plants. As such our comments deal with the generic aspects of the petition.

Part 54 Rulemaking Request

The liquid and gaseous radwaste systems primary functions are the control and management of liquid and gaseous effluent from plant systems. Typically these systems have both carbon steel and stainless steel piping. The systems are not continuously in service and they operate under low pressure/low flow conditions. The fluid in the liquid radwaste system is filtered and demineralized and normally meet chemistry guidelines for use in plant water systems.

The scope of license renewal is determined by applying the criteria delineated in §54.4:

> **§54.4**
> *(a) Plant systems, structures, and components within the scope of this part are --*
>
> *(1) Safety-related systems, structures, and components which are those relied upon to remain functional during and following design-basis*

events (as defined as in 10 CFR 50.49 (b)(1)) to ensure the following functions --

(i) The integrity of the reactor coolant pressure boundary;

(ii) The capability to shut down the reactor and maintain it in a safe shutdown condition; or

(iii) The capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposure comparable to the 10 CFR Part 100 guidelines.

(2) All nonsafety-related systems, structures, and components whose failure could prevent satisfactory accomplishment of any of the functions identified in paragraphs (a)(1)(i), (ii), or (iii) of this section.

(3) All systems, structures, and components relied on in safety analyses or plant evaluations to perform a function that demonstrates compliance with the Commission's regulations for fire protection (10 CFR 50.48), environmental qualification (10 CFR 50.49), pressurized thermal shock (10 CFR 50.61), anticipated transients without scram (10 CFR 50.62), and station blackout (10 CFR 50.63).

Applying the above criteria, the liquid and gaseous radwaste systems are excluded from the scope of license renewal. The petition cites the safety-related definition in §54.4, specifically criterion a(1)(iii) that states a system, structure, or component is safety-related if it is relied upon to remain functional during and following design-basis events to ensure the function of preventing or mitigating the consequences of an accident "...that could result in potential offsite exposure comparable to the guidelines in 50.34(a)(1) or §100.11..." In general, the systems do not meet this criterion. A review of nuclear plant Final Safety Analysis Reports (SAR) will show that neither system is credited as either preventing or mitigating an accident.

Even if the liquid and gaseous radwaste systems were included in the license renewal scope, there is no safety benefit. The systems are design and analyzed such that a catastrophic failure will not adversely impact public health or safety. This will not change as a result of subjecting the systems to an aging management review

Part 51 Rulemaking Request

Part 51 delineates the environmental requirements for license renewal. Appendix B to Subpart A of Part 51 is a Table of environmental impacts applicable to license renewal. The table reflects the results of the NRC staff generic review, which resulted in many of the impacts being resolved for license renewal. Two such impacts deal with occupational radiation exposure and public exposure in the

license renewal term. Both impacts are considered small and need not be evaluated for license renewal because the NRC concluded that the exposures will continue at current levels below regulatory limits.

The petition argues that this conclusion is predicated on a flawed assumption that the components of the liquid and gaseous radwaste systems do not experience greater failure rates during the renewal term. The petitioner's basis for this argument is the concerns outlined in their 2.206 petition regarding the degradation of the radwaste system.

We disagree with the petition.

Generally, licensees evaluate two kinds of waste gas system failures. One is a gross system failure, such as a rupture of a decay tank (Regulatory Guide 1.24) or a rupture of a line (Regulatory Guide 1.98) and the second is malfunctions. These include operator errors, valve misalignments, malfunctions of attendant equipment and active component failures.

NUREG-0800, "Standard Review Plan" (SRP) Chapter 11.3 "Gaseous Waste Management Systems" includes a Branch Technical Position (BTP), ESTB 11-5, "Postulated Radioactive Releases Due to a Waste Gas System Leak or Failure." The BTP provides guidance on postulated radioactive releases due to a radioactive waste gas system leak or failure. The criteria for liquid waste systems are essentially the same.

The basic criterion for reactor accidents, including waste gas system failures, is that offsite dose shall not exceed 25 rem whole body. However, as noted in the BTP, "...that criterion is predicated on the assumption that the probability of occurrence is very small. At least since 1972, it has been recognized that the probability of an accidental release from the waste gas system is relatively high and that lower dose criteria are appropriate."

Initially, the NRC considered a dose of 5 rem but that was later lowered to 2.5 rem for systems designed to withstand explosions and earthquakes. For systems not designed to withstand explosions and earthquakes, the criterion was set at .5 rem. The BTP discusses the fact that malfunctions appear to be the controlling failure mode. Further, the BTP states that a malfunction could give a release approximating that from the rupture of a tank or pipe. Therefore, the guidance in the BTP is to use .5 rem as the dose criterion in all future safety evaluations for waste gas system failures. Thus, a licensee's analysis must demonstrate that a catastrophic failure of the radwaste systems will not result in radioactive releases that threaten public health and safety. This is consistent with the guidelines of 10 CFR Part 20 and is substantially below the guidelines of 10 CFR Part 100.

Conclusion

The design and licensing basis of the liquid and gaseous radwaste systems are sufficiently conservative such that the required analyses demonstrate that the assumed catastrophic failure of components in the systems will result in doses substantially below 10 CFR Part 100 guidelines and consistent with 10 CFR Part 20 guidelines. The radiological inventory in these systems is controlled and limited, and a postulated event or malfunction will not adversely impact public health or safety. Thus, there is no safety benefit to including these systems within the scope of license renewal for either aging management reviews (Part 54) or environmental impacts (Part 51).