

# GENERAL ELECTRIC

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NUCLEAR POWER  
SYSTEMS DIVISION

MFN-277-79

U. S. Nuclear Regulatory Commission  
Division of Operating Reactors  
Office of Nuclear Reactor Regulation  
Washington, D.C. 20555

Attention: Darrell G. Eisenhut, Acting Director  
Division of Operating Reactors

Gentlemen:

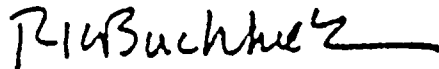
SUBJECT: BWR OWNERS GROUP POSITIONS ON NUREG-0578

Reference: Letter, T. D. Keenan to D. G. Eisenhut, same subject,  
November 15, 1979

As described in the reference, sixty (60) copies of the BWR Owners Group positions on NUREG-0578 Requirements 2.1.6A, 2.1.6B, and 2.1.8A are transmitted herewith on behalf of the BWR Owners Group.

These positions should be inserted into the document "NUREG-0578 and Implementation Letter Requirements - BWR Owners Group Implementation Criteria," October 1979, which was submitted by the Owners Group on October 17, 1979.

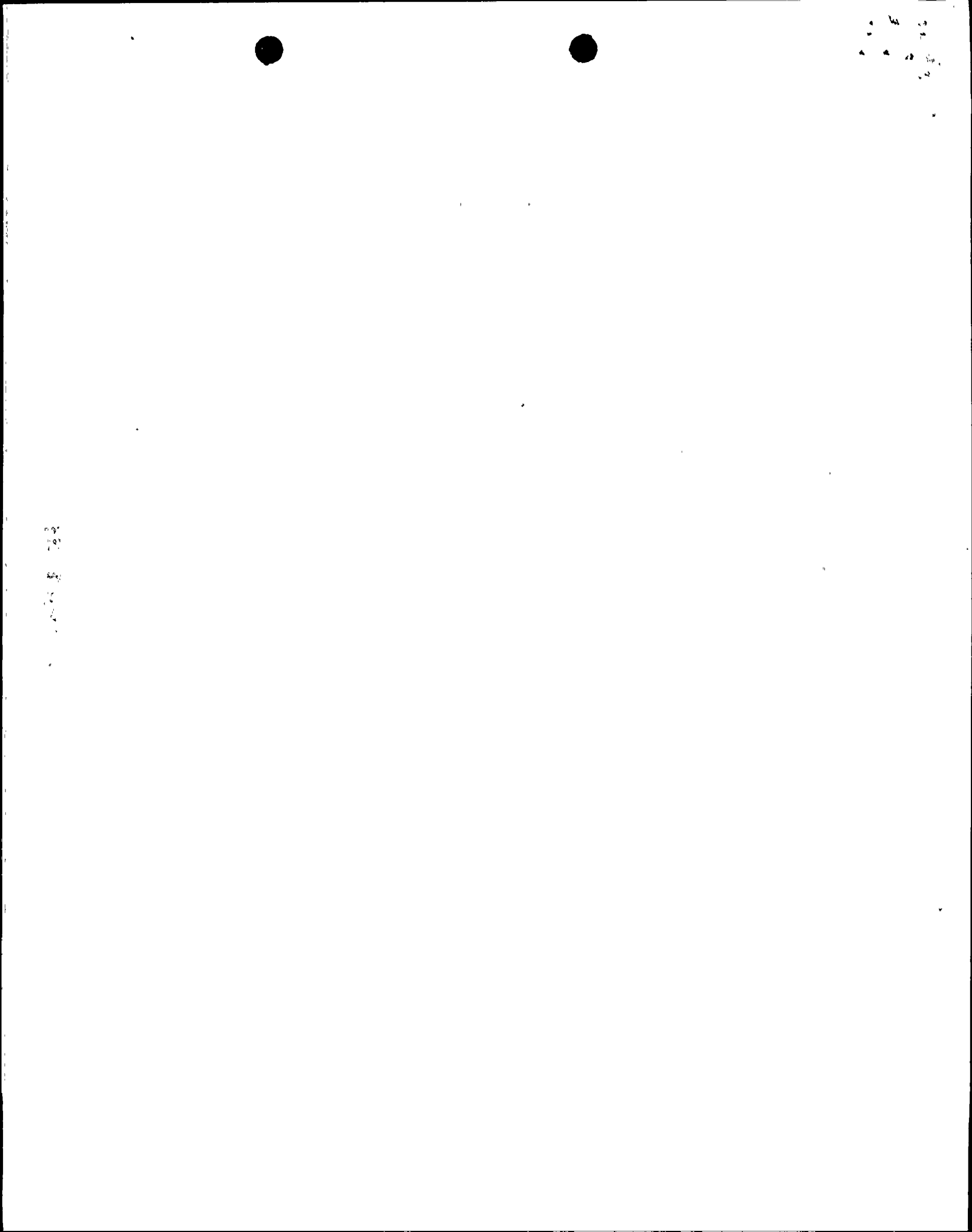
Very truly yours,



R. H. Buchholz, Manager  
BWR Systems Licensing  
Safety and Licensing Operation

RHB:bjr/1059

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NUREG-0578 Requirement 2.1.6A: "Integrity of Systems Outside Containment Likely to Contain Radioactive Materials (Engineered Safety Systems and Auxiliary Systems) for PWRs and BWRs"

Perform leakage rate tests on systems outside containment that process primary coolant and could contain high level radioactive materials. Develop and implement a periodic testing program and preventive maintenance programs.

Discussion:

The BWR Owners' Group agrees with the intent of the staff's position.

BWR Owners' Group Implementation Criteria:

Practical leakage reduction measures will be investigated for systems which may contain radioactive fluids post-LOCA. Such systems as the reactor core isolation cooling system, high-pressure coolant injection system, core spray system, residual heat removal system, and waste disposal system will be examined.

This examination will include a study of valve stem packing leakoffs, rotating seals on equipment, gasketed connections or joints, drains piped to open connections, and reactor drainage system.

Those components in the above systems from which leakage may be measured will be identified and measured leakage from these components will be reported to NRC. A periodic leak inspection program will be implemented on these components.

The above investigations will be completed by January 1, 1980.

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NUREG-0578 Requirement 2.1.68: "Design Review of Plant Shielding for Post-Accident Operations"

Perform a design review of the shielding of systems processing primary coolant outside of containment. Determine any areas or equipment that are vital for post-accident occupancy or operation and assure that access and performance will not be unduly impaired due to radiation from these systems.

Discussion:

BWR plants are specifically designed to mitigate major design basis events with no access outside the MCR being required. With this goal in mind, the plants were not specifically designed for any access outside the main control room. To specifically design for guaranteed access at any time in most parts of the reactor building is not feasible. However, the current designs may allow for access for short times if the entry time into the area can be selectively chosen. Design changes in shielding will be made if evaluations identify feasible modifications which should significantly enhance desirable access. The guidelines for the evaluations are given below.

BWR Owners' Group Implementation Criteria:

A TID-14844 radioactivity release will be assumed into the primary containment. A summation of the radioactivity levels from sump water leakage from process systems in the reactor building will be made. The next step will be to calculate the source terms for the suppression pool recirculating piping, pumps, and valves installed in the reactor building assuming that a TID-14844 release had occurred. The vital areas will be identified in the reactor building which may need to be entered during an accident recovery period. The shielding in these vital areas will be reevaluated to assess its effectiveness in such a circumstance. The occupancy time limits, taking into consideration transit time, airborne radioactivity levels, and gamma shine intensities, will then be calculated for the vital reactor building areas.

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NUREG-0578 Requirement 2.1.8A: "Improved Post-Accident Sampling Capability"

Review and upgrade the capability to obtain samples from the reactor coolant system and the containment atmosphere under high radioactivity conditions. Provide the capability for chemical and spectrum analysis of high-level samples on site.

Discussion:

The BWR Owners' Group agrees with the intent of the staff's position.

BWR Owners' Group Implementation Criteria:

A design and operational review of existing reactor coolant and containment atmosphere sampling facilities will be completed by January 1, 1980.

Modifications will be made to provide the capability to promptly obtain pressurized and unpressurized reactor coolant samples and containment atmosphere samples. Analysis capability shall be provided to identify and quantify (1) certain isotopes that are indicators of core damage (i.e., noble gases, iodines and cesiums, and non-volatile isotopes), and (2) dissolved gases (i.e., H<sub>2</sub> and O<sub>2</sub>). Boron concentration is not to be analyzed since the BWR does not rely on dissolved boron for shutdown.

Until the design modifications are complete, procedures will be devised to evaluate the primary coolant system and containment environment activity depending on the accessibility of the sampling stations for particular degraded conditions. These procedures will be in place by January 1, 1980.

