



Uncontrolled/Unmonitored Releases

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Uncontrolled/Unmonitored Releases

- Topics
 - 2.206 Petition
 - NRC Draft Directors Decision
 - Reasons for Denial of Petition
 - Some Regulations
 - Some Guidance



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- Petition dated January 25, 2006, filed pursuant 10 CFR 2.206 requested NRC respond to public concerns about nuclear reactors releasing water potentially contaminated with radioactive materials by taking the following action:
 - take enforcement action against all applicable licensees, including research and test reactor, by issuing a Demand for Information requiring them to submit on the docket answers to the following questions:
 - What are the systems and components at your licensed facility that contain radioactively contaminated water?
 - What methods are being used to monitor leakage of radioactively contaminated water from the systems and components identified in response to question 1?
 - What is the largest leak rate that can remain undetected by the monitoring methods identified in response to question 2?
 - What methods are being used to monitor the grounds around the facility for potential leakage of radioactively contaminated water from the systems and components identified in response to question 1?
 - What assurance is there against a leak of radioactively contaminated water into the ground around your licensed facility from remaining undetected long enough to permit migration offsite in quantities exceeding federal regulations?



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- NRC issued draft Director's Decision on June 28, 2006
 - Power Reactors
 - The NRC staff is addressing the concerns by interacting with NEI and specific licensees.
 - Because the industry initiative will provide the Petitioners with the requested information, the portion of the Petition related to power reactors is considered granted in part even though the NRC will not use a DFI as the mechanism to obtain the information.
 - Research and Test Reactors, in summary,
 - The NRC denies the Petition because existing regulatory programs ensure that there is minimal risk for a significant release of contaminated liquid effluents, and
 - NRC does not need additional information from the RTR licensees.



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- Reasons for denial on RTRs include:
 - Low power rating and used as needed = low radioactive inventories
 - Small volumes of slightly contaminated water
 - Makeup water at RTRs to address evaporation and controlled leakage is well known and relatively small.
 - Radiation and environmental monitoring programs
 - RTRs assess the possibility of uncontrolled leakage of contaminated liquid and establish preventive measures and protective features.



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- Regulations that provide additional assurance include
 - 20.1302 Compliance with dose limits for individual members of the public. (a) The licensee shall make or cause to be made, as appropriate, surveys of radiation levels in unrestricted and controlled areas and radioactive materials in effluents released to unrestricted and controlled areas to demonstrate compliance with the dose limits for individual members of the public in § 20.1301.
 - 10CFR 50.75(g) Each licensee shall keep records of information important to the safe and effective decommissioning of the facility in an identified location until the license is terminated by the Commission.... Information the Commission considers important to decommissioning consists of--(1) Records of spills or other unusual occurrences involving the spread of contamination in and around the facility, equipment, or site. These records may be limited to instances when significant contamination remains after any cleanup procedures or when there is reasonable likelihood that contaminants may have spread to inaccessible areas as in the case of possible seepage into porous materials such as concrete. These records must include any known information on identification of involved nuclides, quantities, forms, and concentrations.



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- Some NRC RTR Guidance or NUREG-1537
 - Chapter 5, “Discussion of leak detection and allowable leakage limits, “
 - Discuss how the pressure in the secondary system is maintained above that in the primary for all operating conditions, or analyze the radiological effect of leakage of contaminated primary coolant into the secondary system. Isolation of the heat exchanger during shut down periods is an acceptable method to control potential primary to secondary leakage if secondary pressure is lower than primary pressure only during periods of system shut down.
 - Methods should be discussed for tracking makeup water additions to detect significant changes that might indicate leaks or other malfunction of the primary coolant system.
 - Discussion of safety systems and administrative controls to ensure that the system or procedures for adding makeup water will not lead to significant loss of primary coolant and will prevent leakage of contaminated coolant into the potable water supply.
 - Chapter 4
 - Planned methods for assessing radiation damage, chemical damage, or deterioration during the projected lifetime. In this section the applicant should assess the possibility of uncontrolled leakage of contaminated primary coolant and should discuss preventive and protective features.
 - ANSI 15.11-Control in restricted area until disposed or transferred



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- NRC webpage
<http://www.nrc.gov/reactors/operating/ops-experience/grndwtr-contam-tritium.html>
- Questions