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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D. C. 20555

WM Record File

101

WM Project 10

Docket No.

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June 26, 1987

MEMORANDUM: Robert E. Browning, Director
Division of High-level Waste Management

FROM: F. Robert Cook, Senior On-Site Licensing
Representative, Basalt Waste Isolation
Project (BWIP)

SUBJECT: OBSERVATIONS, COMMENTS AND RECOMMENDATIONS
FOR THE PERIOD APRIL 4 TO JUNE 11, 1987

TECHNICAL ITEMS

1. Waste Package--

a. ISSUE: DOE Headquarters has issued a document, Attachment A, which defines various key terms, including "substantially complete" as to its usage with respect to waste package containment. The definition of substantially complete that DOE has specified for the waste package/repository system development is inconsistent with that identified by the Staff in their draft staff technical position (DSTP) concerning this item, being considerably less stringent. The DOE definition represents a major change from that identified for preparation of the SCP in the Fall of 1986 when a definition more consistent with the draft technical position was being used.

The definition would allow large amounts of radioactivity to escape the waste packages in the first 1000 years, the containment period. For example, 1% or 1.5×10^8 Ci would be allowed to have escaped from up to 20% of the waste packages with early or initial failures, assuming an initial inventory of 1.5×10^{10} Ci as identified in the Staff's DSTP. In addition the definition suggests that release rates from the engineered system early in the containment period could be as high as 1.2×10^5 Ci/yr, which is about 100 times the allowed yearly release for the post containment period specified in 10CFR60, assuming the initial inventory noted above.

The sense of the release suggested by DOE, i.e., greater during containment than after containment, contradicts the rationale associated with the containment period and the basis for the 10CFR60 performance objectives, namely that the natural portion of the disposal system will be disturbed by the heat pulse from

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