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MEMORANDUM FOR: William C. Parler, General Counsel
Office of the General Counsel

FROM: Robert M. Bernero, Director
Office of Nuclear Material Safety
and Safeguards

SUBJECT: REQUEST FOR LEGAL OPINION ON THE 300-1,000 YEARS PERIOD FOR
SUBSTANTIALLY COMPLETE CONTAINMENT OF HIGH-LEVEL WASTES
WITHIN THE WASTE PACKAGE UNDER 10 CFR 60.113(a)(1)(ii)(A)

The purpose of this memorandum is to request a legal opinion clarifying the relationship of the performance requirement under 10 CFR 60.113(a)(1)(ii)(A) to the design lifetime of the waste package (WP). Specifically, 10 CFR 60.113(a)(1)(ii)(A) states:

Containment of HLW within the waste packages will be substantially complete for a period to be determined by the Commission taking into account the factors specified in §60.113(b) provided, that such period shall be not less than 300 years nor more than 1,000 years after permanent closure of the geologic repository;

and as referenced, 10 CFR 60.113(b) states, among other things, that:

On a case-by-case basis, the Commission may approve or specify some other radionuclide release rate, designed containment period or pre-waste-emplacement groundwater travel time, provided that the overall system performance objective, as it relates to anticipated processes and events, is satisfied.

The staff further notes that as specified in 10 CFR 60.113(c):

Additional requirements may be found to be necessary to satisfy the overall system performance objective as it relates to unanticipated processes and events.

The phrase "not ... more than 1,000 years" has been taken out of context and interpreted by the U.S. Department of Energy and others to mean an upper limit (a cap) on the period for the WP lifetime rather than an upper bound for the period to be determined by the Commission for substantially complete containment of high-level waste (HLW) within the WP. In other cases, it has been interpreted to mean that one must assure that the WP fails at 1,000 years. The technical staff has also found this to be a point of potential uncertainty and may have, on occasions, inadvertently expressed the 300 to 1,000 year period as the lifetime of the WP.

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Lacking an interpretation from the Office of General Counsel (OGC), the staff's view is that the containment requirement, to be determined between 300 and 1,000 years, is a minimum performance requirement which is not to be viewed as a cap on the WP lifetime or the credit NRC can give if the WP is designed for greater than 1,000 years. The staff recognizes that in order to satisfy the substantially complete containment requirement, the WP must be designed for well beyond 1,000 years and the licensee has the flexibility of proposing its design well in excess of 1,000 years.

Therefore, the staff is requesting a legal opinion from the OGC on whether the 300 to 1,000 year timeframe is the minimum period during which the WP must remain substantially complete or if the 300 to 1,000 year timeframe is the maximum design lifetime for the WP for which the NRC could give credit in its assessment of compliance.

We have previously discussed this matter with Mr. James Wolf of your staff. Therefore, we believe it is feasible to close this matter by March 30, 1990. I would appreciate your efforts to achieve this goal.

Brian Thomas of my staff is the Project Manager for this effort. He can be reached on extension 20435.

(Signed) Robert M. Bernero

Robert M. Bernero, Director
Office of Nuclear Material Safety
and Safeguards

cc: S. Treby
J. Wolf

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