STAFF POSITION 60-003

DEFINITION OF THE TERM "PERFORMANCE OBJECTIVES" AS USED IN 10 CFR 60.133(i)

Division of High-Level Waste Management
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission

August 8, 1990

STAFF POSITION 60-003

SUBJECT: DEFINITION OF THE TERM "PERFORMANCE OBJECTIVES" AS USED IN 10 CFR 60.133(i)

THE QUESTION: In 10 CFR 60.133(i), "Thermal Loads," what performance objectives are encompassed by the phrase "... designed so that the performance objectives will be met..."?

STAFF POSITION: The term "performance objectives" as used in Section 60.133(i) of 10 CFR Part 60 is considered by the NRC staff to apply to both the preclosure and postclosure performance objectives identified in 60.111, 60.112 and 60.113 of 10 CFR Part 60.

ISSUANCE DATE: August 8, 1990

DISCUSSION: Section 60.133(i) falls within a portion of the rule entitled, "Design Criteria For the Geologic Repository Operations Area." The "Geologic Repository Operations Area" is defined in 60.2 as: "Geologic Repository Operations Area means a high-level radioactive waste facility that is part of a geologic repository, including both surface and subsurface areas where waste handling activities are conducted" (emphasis added). The presence of the word "are" in the last sentence seems to limit the applicability of the regulations under this heading to the preclosure period thus excluding the performance objectives stated in 60.112 and 60.113.

On the other hand, Sections 60.112 and 60.113 identify postclosure performance objectives which must be considered when designing the Engineered Barrier System (EBS). The EBS includes the underground facility. Section 60.133(i) is a design criterion for the underground facility. Thus, since 60.133(i) is a design criterion for the underground facility, it appears to be a design criterion applicable to achieving the postclosure performance objectives of 60.112 and 60.113.

However, both the language and regulatory history of §60.133 afford ample support that the design of the underground facility should consider short-term and long-term thermal loads. Thus, in proposing its technical criteria (46 FR 35280, July 8, 1981, at 35285), the Commission explained that the technical criteria required the design of the repository to accommodate potential interaction of the waste, the underground facility, and the site. The rationale for this policy was stated thus: "The Commission believes such requirements are necessary to assure that the ability of the repository to contain and isolate the wastes will not be compromised by the construction of the repository." The rule as it was then being proposed, §60.132(k), called for the underground facility to be designed so that the predicted thermal and thermomechanical response of the rock will not degrade significantly the performance of the repository or the ability of the natural or engineered barriers to retard radionuclide migration. This was an unequivocal reference to long-term (postclosure) performance. Although the final regulation was modified, there was no change in intent, for the Commission indicated that the specific reference to retardation of radionuclide migration -- which was deleted -- "is already covered by requiring that the performance objectives be met." 46 FR 28194, June 21, 1983 at 28215.

Moreover, the regulations reveal that the drafters consciously restricted the scope of the performance objectives to preclosure concerns where that was the intent - as in §60.133(g)(1), which requires design of the ventilation facility to control certain functions "in accordance with the performance objectives of §60.111(a)" - i.e., preclosure criteria.

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

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STAFF POSITION: The term "performance objectives" as used in Section 60.133(i) of 10 CFR Part 60 is considered by the NRC staff to apply to both the preclosure and postclosure performance objectives identified in §§60.111, 60.112 and 60.113 of 10 CFR Part 60.

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However, both the language and regulatory history of 60.133 afford ample support that the design of the underground facility should consider short-term and long-term thermal loads. Thus, in proposing its technical criteria (46 FR 35280, July 8, 1981, at 35285), the Commission explained that the technical criteria required the design of the repository to accommodate potential interaction of the waste, the underground facility, and the site. The rationale for this policy was stated thus: "The Commission believes such requirements are necessary to assure that the ability of the repository to contain and isolate the wastes will not be compromised by the construction of the repository." The rule as it was then being proposed, 10 CFR 60.132 (k), called for the underground facility to be designed so that the predicted thermal and thermomechanical response of the rock will not degrade significantly the performance of the repository or the ability of the natural or engineered barriers to retard radionuclide migration. This was an unequivocal reference to long-term (postclosure) performance. Although the final regulation was modified, there was no change in intent, for the Commission indicated that the specific reference to retardation of radionuclide migration - which was deleted - "is already covered by requiring that the performance objectives be met." 46 FR 28194, June 21, 1983 at 28215.

Moreover, the regulations reveal that the drafters consciously restricted the scope of the performance objectives to preclosure concerns where that was the intent - as in 60.133 (g) (1), which requires design of the ventilation facility to control certain functions "in accordance with the performance objectives of § 60.111 (a) " - i.e., preclosure criteria.

The Office of General Counsel concurs in this position.

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

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