November 29, 1996

MEMORANDUM TO: DWM Staff Involved in HLW Activities

FROM: John H. Austin, Chief   (original signed by:)
                 Performance Assessment and
                   HLW Integration Branch
                 Division of Waste Management/NMSS

SUBJECT: HIGH-LEVEL WASTE INTEGRATION

Attached for your review is a status report containing overall observations
and recommendations by the KTI Integration Task Force. The recommendations of
this Task Force are being coordinated with the recent observations by
Bill King on team building. The Management Board must now decide the future
direction it desires for the program and will solicit staff (both NRC and
CNWRA staff) input at a special Yucca Mountain Team meeting to be conducted
December 11, 1996, from 9:00 am to 11:30 am in room T2-B5. This meeting will
be in the videoconference room to allow CNWRA staff to participate directly.
If at all possible, you are requested to arrange your schedule so that you can
attend.

One common theme reflected in the attached is that the HLW program needs to
develop a written vision that is commonly understood and implemented.
Division management will start the meeting with an open discussion on what
both the staff and management believe should be in this vision. The KTI
Integration Task Force will then discuss the specific recommendations in the
Attachment and the Management Board will solicit staff input on what action
should be taken on each recommendation. If there are alternative
recommendations not listed in the report, that should be considered.
Bill King will both facilitate these discussions and conduct a training module
on team building for the last part of the meeting. After the meeting, a
written vision will be prepared and the Management Board will decide which
recommendations to implement.

Attachment: As stated

Contact: John O. Thoma, DWM/PAHL
          415-7293

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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STATUS REPORT
OVERALL OBSERVATIONS AND RECOMMENDATIONS OF THE
KTI INTEGRATION TASK FORCE

Introduction:

The KTI Integration Task Force interviewed all ten KTI team co-leads to evaluate the effectiveness of integration within the HLW program, with special focus on the support for total system performance assessment. Each interview lasted on the average of two hours. The Task Force emphasized to each Team Lead that this was a fact-finding mission and that the Task Force itself did not intend to issue any programmatic direction, nor should the KTI co-leads construe any questions or comments by the Task Force as direction. Nevertheless, the Task Force did probe the extent and effectiveness of integration, aggressively and in detail; as a result, some of the team co-leads may have been uncomfortable with the interviews.

Observations/Conclusions:

1. Although not perfect, there are positive aspects to the current HLW program. The program is focusing on the more significant technical issues. In addition there are areas where positive aspects of integration were demonstrated. For example, the initial review of TSPA-95 had multiple teams focusing on a common goal with a given schedule and resulted in a focused Appendix 7 meeting which was well received by DOE. The KTI associated with the EPA Standard meets weekly on important regulatory issues, gives individual assignments to each team member, and is aggressive in meeting schedules for a product. The KTI Implementation Plans were a first step in achieving integration in two aspects. First, the KTI Implementation Plans developed input/output components which are directly related to integration. Second, the KTI Implementation Plans were later changed to provide a direct link with DOE's Waste Isolation Strategy, which is good for integrating the national HLW program. The Task Force notes that the recent activities to relate the KTI resource tables to both performance assessment objectives and to Operating Plan milestones, coupled with an enhanced programmatic focus on issue resolution status reports over the last year are positive steps toward development of an overall integrated HLW plan.

2. Each KTI made progress in FY96 towards resolution of specific issues. Although each KTI is planned in detail, the overall planning for the total HLW program is not sufficiently implemented in each KTI. Specifically, all of the KTI Implementation Plans have addressed integration, at least on paper, in the input-output section of the KTI plans. However, there appears to be a breakdown in follow-through. This is particularly reflected in the lack of implementation of an integrated approach for PA throughout the program. As a result of this lack of integration, seven of the ten KTIs could not quantitatively relate the importance of the KTI to total system performance assessment, and therefore, have not yet conducted a sensitivity analysis to demonstrate which elements of the KTI are most important from a

Attachment

total system perspective. To a degree, many KTI Team leads believe the responsibility for conducting sensitivity analysis from a systems perspective, rests solely with one KTI as opposed to being a shared responsibility.

Recommendations for future actions:

The following are recommended actions by the Task Force for the Management Board to consider. If the Management Board decides to implement some of these actions, the Operating Plans should be appropriately modified to track progress.

1. Performance assessment is a key component in integrating the NRC HLW program. Consequently, the HLW Program needs to develop and continuously nurture a shared vision for performance assessment and its role in the program. This vision needs to be shared by the entire NRC HLW staff.

    a. The lead assignment for laying out a concept and schedule for how performance assessment will be used to synthesize information from other program elements, and applying the information to licensing should be the responsibility of the Performance Assessment and Project Management staff. However, as discussed above, all of the HLW staff should be involved in the development of this concept in order to foster a shared vision and acceptance by the complete staff. Historically, NUREG-1495, "Overall Review Strategy for the Nuclear Regulatory Commission's High-Level Waste Repository Program" - commonly referred to as ORS, provided guidance from an overall perspective. SECY-96-120 and its associated White Paper provided the vision for the current restructured program. But the concepts behind these documents need to be expanded to include specific technical issues, modeling approaches, decisions on level of detail, and a schedule for specific actions.

    b. A clear, technically defensible definition of "importance to performance" needs to be developed, promulgated, and adopted by the staff. Eventually, this concept should be linked to the development of acceptance criteria. This definition and others, if needed, should distinguish between sensitivity of some model output to a particular parameter and sensitivity of total system performance to that parameter.

    c. The Performance Assessment staff, in conjunction with the individual KTI Team Leads, needs to articulate a plan for the development of a Total System performance assessment computer code with the requirements for various capabilities clearly stated for each stage of development of the HLW program. This plan should articulate: (a) the prioritization for each element of the code; (b) a prioritization of code development versus other regulatory tools that need to be developed; and (c) a definition of the role of secondary or offline analysis.

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d. Working with the KTI Team Leads, the Performance Assessment team should define, articulate, and periodically revise a standard set of assumptions, scenarios, definition of major parameters important to total system performance assessment, and baseline parameter ranges or values.

e. There should be a plan for periodically updating the baseline performance assessment code to reflect important technical decisions, new site findings, or design changes. Some deviation from the baseline would be allowed within a KTI to investigate sensitivities.

2. Management needs to promote a team approach to the HLW program.

a. Training in team techniques should be advocated by management and taken by staff.

b. Management needs to emphasize the importance of a team approach. Only if the HLW Program's goals are achieved, can an individual KTI Team be considered successful.

c. The project management staff needs to take a more proactive role in assuring technical integration of the program.

3. Plans for the overall HLW program, and in particular for performance assessment activities, must be comprehensive and consistently implemented.

a. An overall integrated program plan needs to be developed, agreed upon, and internally published. Project management working with the performance assessment KTI should have the lead for this effort, but all KTI Team Leads should be involved. This program plan would include objectives and schedules with specific dates for milestones. If a milestone slips, the impact on the entire program should be identified. The major milestones should be reflected in the KTI Tables and both the CNWRA and NRC Operating Plans.

b. KTI Team Leads and their management need to be held accountable for integration as well as resolution of the specific technical issue for the KTI. Line management must follow-up on commitments for progress reflected in the KTI plans and take appropriate action in a timely fashion to assure results. On a set schedule (perhaps monthly), Section Leaders should specifically discuss integration efforts with each assigned KTI Team Lead. On a quarterly basis, one entire Management Board meeting should be devoted to integration. Project management staff should assist these staff and managers by tracking progress in performance assessment and integration.

4. Communication across the HLW Program should be improved.

a. Management, performance assessment, and projects staff should articulate a comprehensive vision for performance assessment in the HLW program and take steps to encourage buy-in from other KTI's.

b. Decisions by the HLW Management Board should be provided to staff in as timely a fashion as possible. Branch Chiefs should provide feedback to

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their Section Leaders. The weekly Yucca mountain team meetings should continue to be used to provide the staff with the direction and rationale of the Management Board. Important decisions, policy direction, changes to plans, and requirements for additional substantive staff effort should be documented in writing and transmitted to the affected staff. The Management Board should solicit staff input on programmatic changes before they occur and decisions should be documented and circulated to the staff.

c. This Integration Task Force, a replacement group, or an individual working out of the performance assessment and technical integration KTI should strengthen the effort to achieve consistent and effective integration.

5. In reviewing the above comments, there are many instances where the Task Force recommends that the Performance Assessment staff assume lead responsibility (primarily, through the performance assessment and technical integration KTI). However, it should be noted by the Management Board that these recommendations are too much work for a single individual. Each element (i.e., code development, technical integration, programmatic integration, or technical review of DOE products) could be a full time effort by itself. Alternatives for the Board to consider include:

a. Having one performance assessment and technical integration KTI Team Lead with designated subleads or principal investigators for each major element.

b. The performance assessment and technical integration KTI could be split into two parts. The performance assessment work would continue under the performance assessment. The integration and planning tasks could be made the responsibility of an Integration task force, which would be composed of Section Leaders and Project Managers. The Task Force would work at a level between the Management Board and the KTI Team Leads. The Task Force would work on integration across the KTIs and work would come through the Task Force to the Board. Care would have to be exercised in implementing this option to insure the program remains totally integrated and does not artificially split into "technical" and "programmatic" integration.

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