Department of Energy
Carlsbad Area Office
P. O. Box 3090
Carlsbad, New Mexico 88221

AUG 17 1994

Ms. Kathleen Sisneros
New Mexico Environment Department
Harold Runnels Bldg.
P.O. Box 26110
Santa Fe, NM 87502

Dear Ms. Sisneros:

Under separate cover, you have received an introduction to the System Prioritization Method (SPM), along with an invitation to participate in a series of briefings on the SPM parameters. We have now finalized the implementation plan for the SPM. Enclosed is a copy for your information and use in participating throughout the prioritization process.

The SPM Implementation Plan explains the general strategy, as well as our goals and expectations for the process. We have formulated a simplified flow diagram to highlight the role that the SPM plays in the overall regulatory compliance mission of the Waste Isolation Pilot Plant. If you have any questions regarding the plan, please contact Mr. Robert Bills of my staff at (505) 234-7481.

Sincerely,

George E. Dials
Manager

Enclosure

cc w/enclosure:
R. Wise, CAO
P. Sallani, CAO

System Prioritization Method Implementation Plan

Introduction

The Carlsbad Area Office (CAO) has recently announced a new approach to identifying experiments, modeling, engineering design, and waste acceptance criteria, called a set of activities, that are needed to support regulatory compliance. This approach is referred to as the System Prioritization Method (SPM) and is shown in the accompanying figure. The SPM is designed to:

1) Address regulator and stakeholder concerns early and throughout the process of regulatory compliance

2) Lead to a scientifically sound Performance Assessment (PA) used in demonstrating regulatory compliance.

3) Use taxpayer dollars in an efficient manner

It is only through total systems analysis that the value of any activity can be assessed. It is possible that through the selection of an engineered barrier that the results of an experiment are no longer valuable. The value of any particular experiment, engineered barrier, repository design, or waste modification is in demonstrating regulatory compliance. If an activity does not meet the above criteria, or the same result can be achieved more efficiently by other means, the activity will not be pursued.

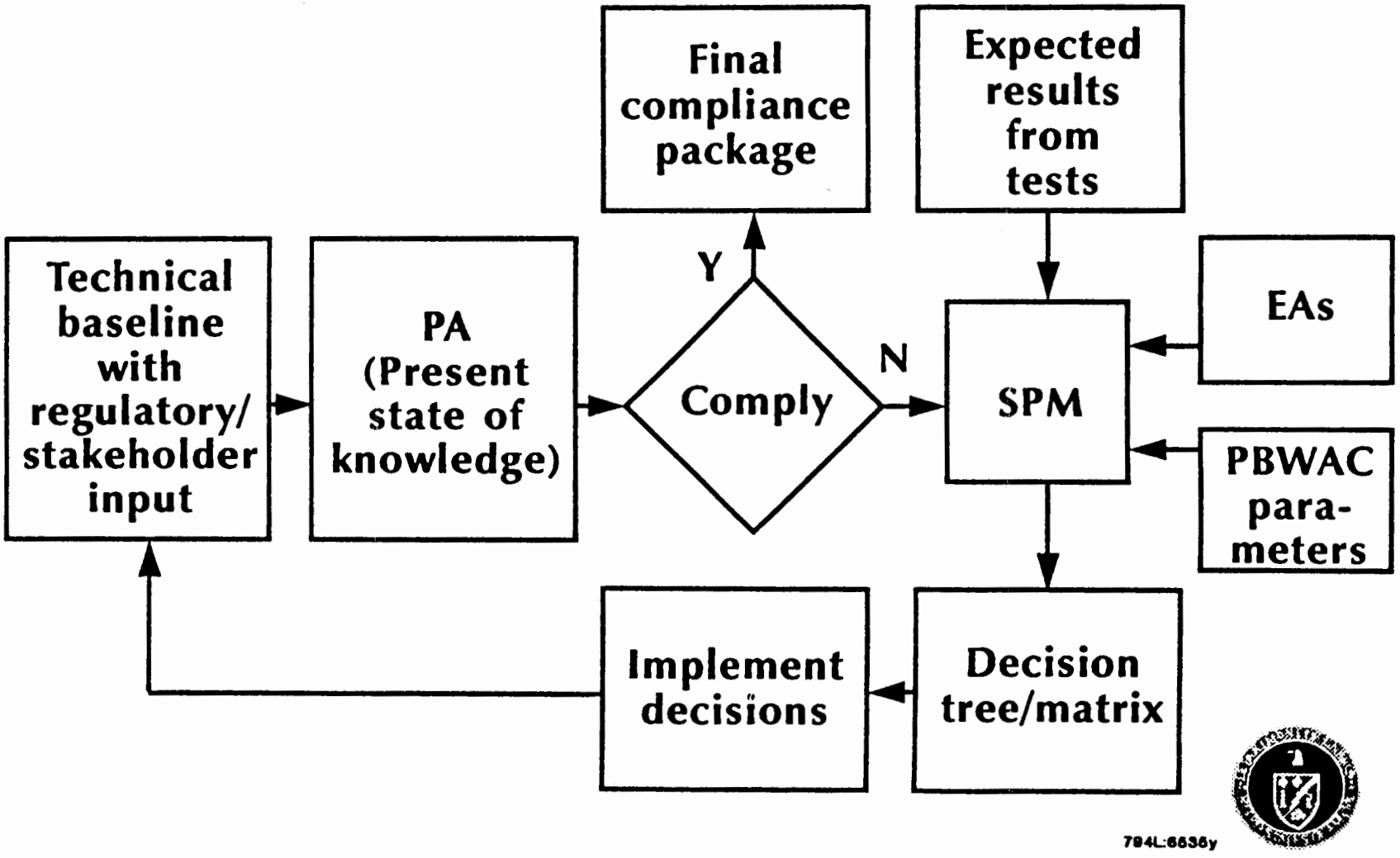
The SPM is an iterative process that uses the PA codes in the same fashion as before but also figures in cost and schedule to prepare a decision matrix of different activity sets leading to compliance. The CAO will decide which activity set best meets the goals of schedule, cost, and assurance of demonstrating full regulatory compliance.

SPM Process

The SPM process consists of a number of tasks which will be performed to determine which set of activities best lead to compliance. The first iteration will use the FY92 PA as the baseline modified by the program participants and the written responses on the FY92 PA received from regulators and stakeholders. The primary purpose is to exercise the process and to develop the procedures and methods.

The second iteration will encompass all credible regulator and stakeholder concerns regarding compliance.

SPM STRATEGY



Regulator and stakeholder concerns that conflict with the Disposal Decision Schedule will still be addressed fully in the SPM. It is important to emphasize that schedule and cost are not constrained in the SPM input. The CAO will, as program manager of the WIPP project, use cost, schedule, and risk as appropriate in determining between different activity sets in the decision matrix.

1) Establishing the baseline for SPM and a scientifically sound PA.

   Performance Assessment is a regulatory required process of identifying scenarios, probabilities, and consequences. The PA will use the 40 CFR 191 defined probability and limits of release from the Waste Isolation Pilot Plant (WIPP) as the quantitative measure of compliance with that regulation. The applicable sections of the Resource,Conservation, and Recovery Act regulations will be used to demonstrate compliance with that law. In addition, the PA will address the sources of uncertainty in the baseline. The CAO's desire for a scientifically sound PA resulted in the following assessment:

   a) insufficient scientific basis is presently available for some of the scenarios, models, and parameters used in the FY92 PA;

   b) A path to compliance that incorporates regulator and stakeholder input provides a more meaningful compliance assessment; and

   c) It may be possible to recognize significant savings in time and dollars by analyzing tradeoffs between potential engineering aspects of the WIPP and the data needs for compliance.

   The first step in the SPM process is the establishment of a new PA baseline. The FY92 PA, as the latest PA, forms the starting point for discussions that will lead to a new baseline. For the first iteration of the SPM, project participants concerns will be elicited. In addition, the written comments and concerns regarding the FY92 PA will be used. For the second iteration, the new baseline will be made available to the regulators and stakeholders. Their concerns regarding scenarios, models, and parameters will be elicited in the same manner as was done for the project participants. The second iteration baseline will represent a consensus arising from considering all scientifically credible concerns. This baseline, represented through the activity sets in the SPM, will allow tradeoffs to be made regarding the best path to full regulatory compliance.

All written concerns, no matter when presented, will be considered and a written response provided. The process used to evaluate and address concerns will:

- Determine whether or not adequate data already exists to address the concern
- Assess whether or not new data have been collected or modeling exercises have been performed which adequately address these concerns
- Define the links between the concerns raised and regulatory compliance

2) Expected outcomes of experiments/investigations

The expected outcome of each experiment or investigation will be elicited from the investigators. These expected outcomes are an essential input for the SPM. To adequately understand the effects on the regulatory performance criteria measures, it is essential to estimate the final results of each experiment. The expectation might be a narrower parameter distribution or the confirmation or refutation of a conceptual model.

The modelers and experimentalists will be required to provide and defend estimates of expected values, ranges, and distributions. From using these expected values, the SPM will provide an estimate of the importance of each experiment and expected outcome.

3) Engineered Design

The SPM will consider possible engineered barriers and repository design changes for the WIPP with respect to the potential impacts on compliance demonstration, schedule, and cost. These engineered barriers and design changes will be considered in the SPM by including the effect(s) they are projected to have on appropriate PA parameters, distributions, and conceptual model selections.

The initial input will be derived from the original Engineered Alternatives Task Force (EATF) report. The report will be updated to ensure that all assumptions used in the original report are still valid. The CAO will choose those engineered barriers and design changes to be considered from the updated report and any new alternatives, barriers, or design changes that are proposed. This list will be made available to the

regulators and stakeholders for review and comment prior to the second iteration of the SPM.

4) Waste Acceptance Criteria (WAC)

Those factors related to the WAC that can be controlled by the waste generators and significantly affect the disposal system will be identified. This, for the purposes of the SPM process, are defined as Performance Based WAC (PBWAC). These factors will be considered in the SPM by including their effect(s) on the appropriate PA parameters and distributions. Changes to the present waste and\or changes to the future waste will be considered.

Any change to the present and\or future waste will be judged on the practicality, cost, safety, and benefit to the WIPP. All changes, to be considered, must be capable of measurement by the waste generator sites.

5) PA and SPM iteration

Using the baseline, the expected outcomes, changes to the engineering design, and the WAC, the parameters, distributions, and conceptual models will be chosen. The concerns of the regulators and the concerns of the stakeholders will be addressed through the selection of the technical baseline. This data will be used in a three step process as follows:

a) The PA calculations used to evaluate the performance relevant to compliance

b) The decision tree calculations

c) The review of the analysis with respect to prior calculations

Information will be solicited from project participants, regulators, and stakeholders concerning the PA modeling to be applied for the prioritization effort. The activities will be assessed with respect to their effect on repository system performance as calculated using the PA analysis tools. The calculations will cover the full range of conceptual models in the baseline as agreed upon in the stakeholder meetings.

A decision tree analysis will be run using the results of the PA calculations. This decision tree will take into account the cost and schedule for each activity set. The net result will be a matrix of the activity

sets ranked with respect to cost and schedule, along with a probability that the activity set, if completed, would lead to demonstrating regulatory compliance.

Proposed Schedule of regulator and stakeholder meetings

Topic		Proposed Date
I.	Performance Methodology	8/30-31
II.	Salado Fluid Flow Repository Scenario Development	9/28-29
III.	Rock Mechanics Disposal Room Modeling Repository Sealing	10/27-28
IV.	Radionuclide Source Term Hazardous Constituents Gas Generation	12/1-2
V.	Non-Salado Fluid Flow	1/9

Note #1: The CAO will develop a position paper on each meeting topic shown above and distribute to regulators and stakeholders two weeks prior to each scheduled meeting. Regulators and stakeholders would be expected to prepare comments or responses to the position paper for presentation to CAO. It would be appreciated if the comments are faxed to the CAO prior to the meeting but are acceptable at the meeting.

Documentation

Large amounts of information will be generated as part of the prioritization process. The information will be documented from identification through closure.

Meetings will be held with the regulators and stakeholders to review and discuss the overall SPM process and results of each iteration.