

# UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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BRIEFING BY DOE ON STATUS OF  
CIVILIAN HIGH-LEVEL WASTE

- - - -

PUBLIC MEETING

Nuclear Regulatory Commission  
One White Flint North  
Rockville, Maryland

Tuesday, December 18, 1990

The Commission met in open session,  
pursuant to notice, at 10:00 a.m., Kenneth M. Carr,  
Chairman, presiding.

COMMISSIONERS PRESENT:

KENNETH M. CARR, Chairman of the Commission  
KENNETH C. ROGERS, Commissioner  
JAMES R. CURTISS, Commissioner  
FORREST J. REMICK, Commissioner

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STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

SAMUEL J. CHILK, Secretary

JOE SCINTO, Office of the General Counsel

DR. JOHN BARTLETT, Director, Office of Civilian  
Rad Waste Management, DOE

FRANK PETERS, Deputy Director, Office of Civilian  
Rad Waste Management, DOE

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P-R-O-C-E-E-D-I-N-G-S

10:03 a.m.

CHAIRMAN CARR: Good morning, ladies and gentlemen.

The purpose of today's meeting is to hear from the Department of Energy on the status of the Civilian High-Level Waste Program. As directed by the Congress in the Nuclear Waste Policy Act, the Department of Energy has been conducting a program for siting the nation's first geologic repository for disposal of high-level radioactive waste. The Nuclear Regulatory Commission has been proceeding in parallel with its responsibilities for licensing this first of a kind facility.

The Commission last met with the Department on this subject in December of 1989. Since then, several significant activities have taken place that have had or may have an impact on progress on this program, including the reorganization of the Office of Civilian Radioactive Waste Management and other management initiatives, appointment of a nuclear waste negotiator, significant progress in DOE's implementation of a quality assurance program, and a decision by the Court of Appeals for the Ninth Circuit regarding the State of Nevada's challenge to site

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1       characterization activities.

2               The Commission is pleased to have with us  
3       today Doctor John Bartlett, Director of the Office of  
4       Civilian Radioactive Waste Management, and Mr. Frank  
5       Peters, Deputy Director, to discuss the status of the  
6       program.

7               Welcome, Doctor Bartlett. This is the  
8       first opportunity the Commission has had to meet with  
9       you since your confirmation.

10              Do any of my fellow Commissioners have any  
11      opening remarks?

12              If not, Doctor Bartlett, please proceed.

13              DOCTOR BARTLETT: Thank you very much, Mr.  
14      Chairman. It's a real pleasure and honor to be here  
15      with you today. As the Chairman just said, this is  
16      my first opportunity to meet with you.

17              I have submitted for the record a  
18      comprehensive statement addressing the things that we  
19      have been addressing this year and have accomplished.  
20      What I would like to do today is speak briefly from  
21      an abstract essentially of the information that's  
22      contained in that statement. I will try to be brief  
23      so that we have opportunity for dialogue as we go.

24              (Slide) If I can have the first  
25      viewgraph, something better than a picture of myself,

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1 something much more effective.

2 I'd like to address basically three things  
3 today: our office credo; the key 1990 actions,  
4 initiatives and events; and our plans and expectations  
5 for the future. I'd like to start with the credo as  
6 something that wasn't necessarily on your agenda, but  
7 it seems to me that it's very important that we at the  
8 Office of Civilian Waste Management have a very clear  
9 and strong sense of what we're all about. So, we have  
10 recently adopted a credo for our operations and I  
11 would like to share it with you this morning and make  
12 it public for the very first time. This will be  
13 distributed within our offices and displayed  
14 appropriately and used as a basis for our operations  
15 in the future. Then, after that, we'll go onto the  
16 key actions in our plans, if I may.

17 (Slide) So, I'd like to run through the  
18 material that's within the credo, if I can have the  
19 next slide, please.

20 We are, of course, the Office of Civilian  
21 Radioactive Waste Management and we have the  
22 responsibility to be a steward of high-level  
23 radioactive waste in timely fashion. I would comment  
24 at this point that not to do so is, in my opinion,  
25 non-management and a failure to balance the benefits

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1 that we derived today from the use of nuclear power  
2 with our responsibilities to effectively manage the  
3 wastes that are produced by those operations. And in  
4 so doing, of course, we have responsibility to protect  
5 the health and safety of the public while we're about  
6 our duties.

7 (Slide) As we have all said many times,  
8 if I may have the next slide, it's absolutely  
9 essentially that all of the activities within this  
10 program be of the highest quality and of impeccable  
11 efforts with respect to interactions, with respect to  
12 accomplishments, with respect to fulfilling our  
13 mission at the very highest levels of effort and  
14 quality. So, this is one of the key features of our  
15 credo.

16 The next point is very important to me.  
17 It says, "We measure our success by our contribution  
18 to the protection and enhancement of the environment  
19 in which we live." I would say that first and  
20 foremost the OCRWM mission is, in fact, an  
21 environmental protection mission and our job is to  
22 prevent releases to the environment while the wastes  
23 are in our environment and then to ensure that there  
24 will be no insults to the environment later through  
25 isolation of the waste by geologic disposal. That is

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1 really, in many ways, the nutshell of our mission  
2 right there.

3 (Slide) Of course as we implement it, if  
4 I may have the next slide, we will be assuring that  
5 we do not transfer the risks associated with the waste  
6 we have produced today to future generations and  
7 certainly at no higher level than the risks which we  
8 encounter today. In doing that, we are fulfilling,  
9 as the next bullet says, our responsibilities not only  
10 as a federal agency, as the surrogate of public  
11 interest and public health and safety, but the broad  
12 national interest. Of course, this is very important,  
13 as we may discuss later, depending on your inclination  
14 with respect to our activities to get back on Yucca  
15 Mountain and proceed with our mission in terms of  
16 characterizing the Yucca Mountain site.

17 (Slide) If I may have the next viewgraph.

18 The last two points with respect to our  
19 credo are that, of course, we employ the highest  
20 capability of technical resources that are available  
21 to us and that are available worldwide and we make use  
22 of worldwide resources through interactions with  
23 programs in other nations, through peer reviews, et  
24 cetera, so that we are assuring ourselves and the  
25 Nuclear Regulatory Commission and all other interested

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1 parties that, in fact, we are operating at the highest  
2 possible technical and professional level in the  
3 program.

4 Of course, another feature of the program  
5 is that in being successful we will remove what might  
6 be a potential obstacle for future use of the nuclear  
7 option.

8 Those are the basic provisions of our  
9 credo and I have available for you and for your key  
10 staff copies of it, suitable for framing. These will  
11 be available for you after our meeting. I thank you  
12 for the opportunity to use this occasion to share that  
13 with you.

14 If I may now, I'd like to move on to the  
15 key 1990 actions, initiatives and events which are  
16 described in some detail, of course, in the written  
17 statement. I would like to highlight them and I would  
18 like to do the highlighting under basically five areas  
19 of highlights dealing with management improvement,  
20 program strategy highlights, program progress  
21 highlights, program issues and expected key activities  
22 and accomplishments in 1991.

23 (Slide) If I may have the next viewgraph,  
24 which should be the organization chart.

25 I'd like to share with you a few comments

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1 about this reorganization. The previous organization  
2 was essentially a matrix organization and was  
3 established to deal with the fact that at the time it  
4 was in place the program was dealing with multiple  
5 sites and the process of selecting sites from an array  
6 that was available. So, it was essentially a matrix  
7 organization. What we now have is an organization  
8 which is aimed at the restructuring and the objectives  
9 that were established by the Secretary back about a  
10 year ago. What I'd like to do is highlight some of  
11 the features of this new organization for you.

12 First of all, the Office of Quality  
13 Assurance is independent and will remain so, needless  
14 to say, so that it provides the independence that the  
15 program needs to assure that our quality assurance  
16 activities and documentation meet the requirements of  
17 the Commission.

18 I would like now to move into some  
19 comments about the Office of Geologic Disposal. This  
20 office now reports to the Director as an Associate  
21 Director of the program. Previously we had Yucca  
22 Mountain project manager and it did not report  
23 directly to the office. What we have now is a  
24 circumstance where the Associate Director of Geologic  
25 Disposal has responsibility for the Yucca Mountain

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1 site characterization project and also has  
2 responsibility for program-oriented activities such  
3 as the methodology for determining site suitability,  
4 which is fundamentally a generic program option.

5 We also have now the Office of Storage and  
6 Transportation. In this office we bring together the  
7 predisposal activities having to do with the spent  
8 fuel acceptance system, the transportation system and  
9 the storage facilities and system that will be used  
10 to manage the waste before disposal. This brings  
11 together, as I said, and integrates and focuses all  
12 of the predisposal activities to assure that we have  
13 continuity and to assure that the program activities  
14 will be consistent with the objectives set by the  
15 Secretary to begin spent fuel acceptance in 1998. Our  
16 program activities there are aimed at achieving that  
17 goal.

18 We also have the Office of Contract  
19 Business Management now established. The principal  
20 function of this office is to elevate and give  
21 visibility, accountability, et cetera, to our  
22 functions with respect to management of our support  
23 contractors. A major function here is management of  
24 the new M&O support contractor who will be taking over  
25 some of the activities of previous contractors and to

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1 consolidate and integrate the activities of all the  
2 rest of our support contractors.

3 The Office of Systems and Compliance  
4 provides for the program the framework, a systems-  
5 based framework, for allocation and management of the  
6 requirements imposed on the program, of which there  
7 are very many. Among them are, of course, the  
8 requirements under 10 CFR Part 60, but altogether we  
9 have something on the order of 2500 requirements  
10 through various regulations, DOE orders, et cetera.

11 This office has responsibility to  
12 structure those requirements and to allocate them to  
13 the program operations and management responsibilities  
14 to assure that the requirements are properly met and  
15 that ultimately our documentations for licensing  
16 applications will be effective in all respects. This  
17 office also has responsibility for being the point of  
18 contact with respect to regulatory compliance. So our  
19 staff in this office are the principal points of  
20 interaction with your staff.

21 With those comments, I'd like to take this  
22 opportunity to ask my support staff to introduce  
23 themselves because they're representing these offices.

24 Dwight?

25 MR. SHELOR: I'm Dwight Shelor. I'm the

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1 Associate Director for Systems and Compliance.

2 MR. MILNER: Ron Milner. I'm the Acting  
3 Associate Director for Storage and Transportation.

4 MR. GERTZ: I'm Carl Gertz. I'm the  
5 Associate Director for Geologic Disposal.

6 MR. SALTZMAN: Jerry Saltzman. I'm the  
7 Director of the Office of External Relations.

8 MS. DESELL: Linda Desell, Acting Branch  
9 Chief, Regulatory Integration in the Office of Systems  
10 and Compliance.

11 MS. HANNA: I'm Stephanie Hanna, Office  
12 of Public Affairs for the Civilian Waste Program.

13 MR. HORTON: I'm Donald Horton, Acting  
14 Director, Office of Quality Assurance.

15 DOCTOR BARTLETT: Don and Carl especially  
16 deserve Brownie points this morning. They got here  
17 after being caught in a snowstorm in the Midwest last  
18 night.

19 We have represented here in these people  
20 just an absolutely excellent staff. I'm very pleased  
21 to have the opportunity to work with them and it's  
22 really a great situation.

23 COMMISSIONER ROGERS: Before you move on,  
24 Doctor Bartlett, I wonder if you could give us any  
25 idea of what the staffing levels are in these

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1 different offices. Is that convenient for you to do  
2 or is that not -- are those numbers not right at your  
3 fingertips?

4 DOCTOR BARTLETT: Well, they're not right  
5 at my fingertips. I can tell you that the DOE  
6 staffing total in the Headquarters office and in the  
7 Yucca Mountain or Nevada office is approximately 230  
8 at this time. Of those, about 125 are in  
9 Headquarters, which is all of the functions except the  
10 Office of Geologic Disposal, and the remainder are in  
11 Nevada.

12 I might also mention that the Office of  
13 Contract Business Management is currently being headed  
14 on an acting basis by Mr. Peters, our Associate  
15 Director, and he has been implementing the development  
16 of the M&O contract, which is still in process.

17 Very roughly speaking, each of the offices  
18 has on the order of 20, 25 DOE personnel.

19 Any further questions with respect to the  
20 organization right now?

21 (Slide) Okay. If I may, I'd like to move  
22 on to the next viewgraph, which deals with management  
23 improvement highlights for this past year. What I'd  
24 like to briefly address is things that have happened  
25 both within our organization and within the Department

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1 to improve the visibility and accountability and  
2 operations with respect to our program activities both  
3 within the Department and with our contractors.

4 One of the key actions I took soon after  
5 I came on board was to establish the management  
6 systems improvement strategy, what we call the MSIS,  
7 which basically implements a system-based structure  
8 and allocation of the program requirements. This is  
9 the mechanism, the tool through which we accomplish  
10 the allocation of the requirements and the functional  
11 distribution with respect to the physical operations  
12 in the system and with respect to the management  
13 operations leading eventually to those physical  
14 systems. This is a system which is ongoing in terms  
15 of its implementation. We are prioritizing it and  
16 matching the targets of it with the targets of  
17 activity in the implementation activities. In other  
18 words, the monitored retrievable storage system, the  
19 transportation system and the geologic disposal  
20 system.

21 So, the implementation of the strategy as  
22 a program activity will stand a fair amount of time.  
23 Basically in order it is providing this structuring  
24 on a top-down basis, systems oriented, to assure that  
25 the requirements are all met, they're properly

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1 allocated as a basis for program progress.

2 COMMISSIONER ROGERS: Is there somebody  
3 that heads that up as such?

4 DOCTOR BARTLETT: Mr. Shelor has the lead  
5 responsibility.

6 COMMISSIONER ROGERS: I see. So, that is  
7 located in the systems area?

8 DOCTOR BARTLETT: That's right.

9 With respect to the quality assurance  
10 program, we completed our DOE program audits this fall  
11 and on December 11th submitted to the Commission our  
12 letter requesting acceptance of those portions of the  
13 system dealing with our expected near-term activities  
14 at Yucca Mountain. Specifically we're planning to  
15 investigate faults in Midway Valley and the calcite  
16 silica deposits in Trench 14 and other locations.

17 So, we have that as part of something I'll  
18 address later in our readiness to resume activities  
19 at Yucca Mountain. That's just part of the picture,  
20 but that has been established.

21 The Department itself has established an  
22 Energy Systems Acquisition Advisory Board. This is  
23 broad to the Department, not just to our office. But  
24 it serves the function for the Department to control  
25 cost schedule and technical baseline for major

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1 acquisitions. Within our office, major acquisitions  
2 are the Yucca Mountain site evaluation and the  
3 monitored retrievable storage facility, when they come  
4 to be so. When we get these things into operation,  
5 they will be subject to the Department-wide controls  
6 of this Acquisition Advisory Board to make sure that  
7 it's consistent with program activities and  
8 requirements of that type.

9 Within the Program Office, we have  
10 established our own cost and schedule control systems  
11 to monitor and control and provide accountability for  
12 our program activities. Within the Yucca Mountain  
13 Project Office, for example, there's some 5,000 or  
14 6,000 identified activities that are ongoing, that are  
15 incorporated in this system in what we call a PACS,  
16 planning and control system, which provides the  
17 monitoring and the management basis for control of  
18 those activities.

19 Then, of course, we have underway, as I  
20 mentioned, the procurement of our management and  
21 operations contractor who will provide services which  
22 will integrate activities of past contractors and  
23 gradually over time incorporate some of those. The  
24 key function in my mind that they provide in the near-  
25 term in particular is to foster the integration of our

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1 contract support activities and to assure that they  
2 are effectively supporting us.

3 COMMISSIONER REMICK: Before leaving that  
4 slide, Doctor Bartlett, I can't resist making one  
5 comment because you stress the importance of Quality  
6 Assurance Office being independent, and it should.  
7 But I can't help but observe that I think one of the  
8 lessons learned in the nuclear industry from years  
9 past is that -- and I think this Agency contributed  
10 by emphasizing so strongly that quality assurance must  
11 be independent that we did lose the concept that  
12 everybody has a responsibility and it's the role of  
13 the quality assurance people to assure that that  
14 process is in place. But I think this Agency, one of  
15 my personal feelings anyhow, emphasized so strongly  
16 that that organization had to be independent that  
17 everybody thought that it was somebody else's  
18 responsibility. It's a trivial point perhaps, but it  
19 is a lesson I think we've learned and easy to forget.  
20 I assume that that's not the intent in DOE.

21 DOCTOR BARTLETT: Not at all. I didn't  
22 mention here, but I will now, thank you, that in  
23 addition to having the Quality Assurance Office  
24 independent to implement its system, the feedback and  
25 the interaction to the line management is through a

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1 total quality management system which we're beginning  
2 to develop. Our activities in this area are really  
3 just beginning to evolve because of the  
4 reorganization. People are in new positions and a lot  
5 of the activities which we are just getting underway  
6 have not been in place in the past. So, we're  
7 starting to try to bring together all elements of  
8 quality assurance to what is in essence in many ways  
9 a new operation with new people.

10 So, there's a learning curve involved in  
11 this. I like to think we're working it pretty  
12 effectively. We are trying to bring them together  
13 through a TQM program that will be implemented within  
14 the line organization and has interface with the QA  
15 office.

16 (Slide) If I can move onto the next  
17 viewgraph, which addresses program strategy  
18 highlights.

19 As I mentioned before in talking about the  
20 reorganization, the Office of Storage and  
21 Transportation integrates our activities with respect  
22 to spent fuel acceptance, storage and transportation.  
23 The schedules for those activities are again  
24 integrated to assure that we are pointed toward  
25 meeting the Secretary's goal of beginning spent fuel

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1 acceptance in 1998. This does bring a good many  
2 activities into play. Let me simply say at this point  
3 that we are trying to assure that all of the  
4 interfaces, for example with the utilities who have  
5 the inventories of spent fuel which we must sequence  
6 and set up logistically for the acceptance, along with  
7 our technologies, are being brought together in this  
8 office and in these programs.

9 With respect to the Yucca Mountain  
10 characterization activities, the major thing that's  
11 been accomplished here during the past year is a  
12 prioritization of activities that were described in  
13 the site characterization plan for purposes of  
14 focusing on and accomplishing an evaluation of the  
15 suitability of the site for disposal as soon as  
16 possible. This, I would emphasize, represents  
17 prioritization and focus to that purpose, which was  
18 not previously reflected in the program. In essence,  
19 this is a new element of strategy, to get to the  
20 answer in terms of site suitability as soon as  
21 possible. I'll come back to that point in context of  
22 the next item, which is methods for evaluating site  
23 suitability.

24 We started about a month ago with an in-  
25 house workshop, a dedicated activity to develop the

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1 methods by which we will determine whether or not the  
2 Yucca Mountain site is suitable for disposal. I  
3 brought together in an in-house workshop, as I said,  
4 the relevant technical personnel, the people who could  
5 advise us, in other words legal personnel with respect  
6 to adaptation of the regulations, and the management  
7 aspects of this thing, looking at things such as  
8 management risk and prudence in management, et cetera.  
9 So, we all came together and essentially identified  
10 and ventilated the issues associated with how in the  
11 world we're going to make this evaluation of site  
12 suitability.

13 Coming out of that, we have essentially  
14 three factors to be dealt with in developing a  
15 methodology. One, of course, is suitability itself  
16 which is also related to determinability, our  
17 potential to reduce uncertainty concerning our  
18 knowledge and ability to assess the characteristics  
19 of the site and, thirdly, of course, licenseability.

20 All three factors are related and the  
21 stage we are at right now is that I expect before the  
22 end of the month to receive from Mr. Gertz' office the  
23 proposed management plan for how we will proceed with  
24 this. Basically, I can tell you at this point our  
25 objective is to develop our proposed methodology, at

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1 least in concept, and to go public with it hopefully  
2 around late spring so that we can share with the world  
3 and receive comments from the world on just how we're  
4 going to make this determination.

5 So that is a specific activity that we  
6 have underway at this stage.

7 COMMISSIONER REMICK: In your written  
8 statement you refer to alternative methodologies. You  
9 refer to Golder Associates and EPRI and the DOE  
10 effort. Is that what you're speaking of right now?

11 DOCTOR BARTLETT: That was part of the  
12 background for where we are right now. Some time ago,  
13 I set up so that Golder Associates and the Electric  
14 Power Research Institute, independently on their own  
15 without interaction with DOE except they obtained data  
16 and related information, developed their own  
17 approaches to how they would evaluate suit  
18 suitability. What we did at this workshop is bring  
19 together the Golder methodology, the EPRI methodology  
20 and the DOE methodologies to see if they bore any  
21 resemblance to each other. As a matter of fact, they  
22 did.

23 COMMISSIONER REMICK: They did or --

24 DOCTOR BARTLETT: They did. It indicated  
25 both that we're all probably on the right track, but

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1 that there's certainly a framework and a range of  
2 issues. It turned out that the methodologies have  
3 different strengths. For example, the EPRI methodology  
4 lends itself very well to identifying what might be  
5 the key issues. Then the Golder methodology lends  
6 itself very well to what might be the best strategy  
7 for reducing uncertainty effectively. The DOE  
8 methodology is oriented toward essentially the  
9 performance assessment of the system.

10 So, each of them has something to  
11 contribute. As we go forward in this management plan  
12 for developing the method, we will be making use of  
13 the EPRI and Golder methodologies, but they provided  
14 a broad base for the start of this activity.

15 The other really important thing that  
16 we've begun in my mind is the selection of strategic  
17 principles to guide the mission implementation. The  
18 basis for this is my perception that the program in  
19 order to proceed with focus and rationale for the  
20 specific activities with regard, for example, to the  
21 monitored retrievable storage and the transportation  
22 systems, needs to have these strategic principles as  
23 a basis for the specific activities and technologies  
24 that are chosen.

25 The framework that's provided by the

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1 Nuclear Waste Policy Act as amended is, in fact, very  
2 broad. In fact, there's over 2,000 alternative  
3 technologies and methods of implementation that are  
4 possible under that framework. So, what we need are  
5 strategic principles such as decisions on whether or  
6 not we're going to cool the fuel for a long time  
7 before disposal, whether or not we're going to use  
8 robust containers that provide defense in depth,  
9 things of this type, that will guide the program and  
10 narrow the options and provide focus for the future.

11 So, we are in process of adopting,  
12 selecting and adopting the strategic principles which,  
13 as I said, would be the basis for the mission  
14 implementation plan itself. We're doing this by  
15 having workshops with the involved and affected  
16 parties and interested parties where they give us  
17 predecisional input and their opinions with respect  
18 to these issues.

19 We have had one of the workshops. We will  
20 have another the middle of next month and then after  
21 we have received the inputs from these parties, DOE  
22 internally will noodle in a management sense about  
23 them and come up with our proposed adoptions of the  
24 strategic principles based on what we've heard and our  
25 opinions. Then we will feed back in a third workshop

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1 to the parties what we have selected and get their  
2 final input.

3 We, of course, retain the responsibility  
4 for selection of these principles, but we want very  
5 much to have the inputs from these parties. I might  
6 say that the first workshop was very successful in my  
7 mind in that sense. It clearly aired the variety of  
8 issues and opinions that are associated with these  
9 principles.

10 COMMISSIONER REMICK: Was this the  
11 workshop just recently?

12 DOCTOR BARTLETT: Yes. It was held in  
13 Salt Lake City just a couple weeks ago.

14 (Slide) If I might move onto the next  
15 viewgraph, program progress highlights.

16 The first bullet says, "Expansion of Yucca  
17 Mountain evaluation activities." This, of course, is  
18 what we hope to do once we get back on the mountain.  
19 The point I would make here is that we have been  
20 working very hard during past months to assure that  
21 we are ready to do so. I had a list I worked with the  
22 Secretary of about 12 items of readiness culminating  
23 in an actual readiness review. It included things  
24 such as the Quality Assurance Program being in place,  
25 et cetera.

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1           The point I would make here is we are  
2 ready. We have been working to the Secretary's  
3 milestone of beginning activities on January 20th,  
4 Carl?

5           MR. GERTZ: That's correct.

6           DOCTOR BARTLETT: And we'll be ready to  
7 do so if the courts and other parties would let us do  
8 so. But this has been our objective and Carl, I might  
9 say, has done just a terrific job of marshaling the  
10 technical resource and bring all the parts together  
11 so that we are, in fact, ready.

12           The Ninth Circuit Court, as you know,  
13 found in favor of the Department of Energy with  
14 respect to the state's what we call veto case. They  
15 found strongly and decisively in favor of the  
16 Department. Tomorrow is the day on which we  
17 anticipate the state will appeal the case to the  
18 Supreme Court. Just last Friday in the District  
19 Court, the judge said that he was going to continue  
20 stay on our permits case until January 15, at which  
21 time the state will be asked to file in response to  
22 our request for a summary judgment for the judge to  
23 issue us the permits we need to get started. Then,  
24 about ten days after that, we have to file a reply to  
25 that. So, that process is still ongoing.

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1 I might observe at this point that if the  
2 court process is not -- is allowed to proceed under  
3 the policy as we understand it that the state has  
4 adopted, it could be anywhere from five to eight years  
5 before we get back on the mountain. So, as a result,  
6 I'm going to talk to you in a little bit about  
7 initiatives for legislation to avoid that hiatus.

8 Another area of progress is, of course,  
9 that the negotiator, as you know, was appointed and  
10 confirmed by the Senate and is in operation. We have  
11 signed -- the Department has signed with the Office  
12 of the Negotiator a memorandum of understanding of  
13 operation, under which basically we provide support  
14 to him as needed. Essentially that will be technical  
15 support and we're sitting there ready to go in  
16 response to his request. He is, at present, getting  
17 his office organized and we're expecting actions  
18 probably beginning next month.

19 Another major accomplishment during this  
20 past year was we have conducted an exhaustive  
21 evaluation of exploratory shaft facility alternatives.  
22 You'll recall that the Commission in commenting on our  
23 site characterization plan noted that the design that  
24 was proposed in that plan, consisting of two vertical  
25 shafts, might benefit from a revisit of the

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1 alternatives. So, we have done that in great detail.  
2 We now have 34 alternatives under consideration and  
3 have been applying a massive decision analysis  
4 methodology to those alternatives to identify which  
5 ones might be preferred.

6 Broadly and conceptually, they deal with  
7 combinations of shafts and ramps as means of access  
8 and whether or not to penetrate the Calico Hills  
9 formation underneath the disposal horizon of Topopah  
10 Springs in order to facilitate evaluation of that  
11 geology.

12 The findings of that evaluation will be  
13 coming to me shortly and early next year I will be  
14 making a decision on which of these would be the  
15 preferred alternative with which to proceed.

16 I'd already mentioned that our program-  
17 wide quality assurance system has been established.  
18 Of course, this is essential for all our activities  
19 and I won't pursue that anymore at this point. I'd  
20 just move on to say that, as the last bullet says, we  
21 have been having extensive dialogue with the  
22 Commission, staff, with the Technical Review Board,  
23 with the National Academy of Sciences and many others  
24 on essentially all activities within the program.  
25 During the past year so far we've had 23 meetings with

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1 Commission staff. We had 19 with the Technical Review  
2 Board. We've had several with the Academy.

3 (Slide) If I can have the next viewgraph,  
4 it gives you a picture of -- you certainly can't see  
5 that on the TV monitor. We'd better not have anybody  
6 else to interact with because we've got no place to  
7 put the bubble. All spaces are used up. This is  
8 probably the most over-sited and interacting program  
9 in the federal government.

10 I might comment at this point that that  
11 commands a lot of resources. In essence, it adds a  
12 dimension of program activity that's vitally important  
13 but has to be accounted for in terms of our management  
14 and utilization of our resources. Many, many parties  
15 involved and needless to say we try to do our best in  
16 all of them, all of those interactions.

17 COMMISSIONER REMICK: Last year when Mr.  
18 Duffy was here, he suggested that perhaps our Advisory  
19 Committee on Nuclear Waste needed more resources so  
20 there was a greater opportunity for interaction  
21 between the Committee and DOE. Is that still the  
22 position of DOE or do you think that interaction has  
23 been adequate?

24 DOCTOR BARTLETT: It's my impression that  
25 it's been adequate. I might turn to some of the staff

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1 for any further comments on that who have been more  
2 deeply involved.

3 CHAIRMAN CARR: Would you go to the  
4 microphone and identify yourself, Carl?

5 MR. GERTZ: I'm Carl Gertz, Yucca Mountain  
6 Project Manager and Associate Director for Geologic  
7 Disposal.

8 We have been interacting, of course, with  
9 the Advisory Committee. We believe that's an  
10 important interaction along with, of course, your  
11 staff. I guess as the issues become more complex or  
12 we try to reach issue resolution, there may be a need  
13 for more detailed interactions. I can't point to any  
14 specific need right now, but I believe that's a forum  
15 that will be useful to both of us in the future.

16 COMMISSIONER REMICK: Thank you.

17 DOCTOR BARTLETT: (Slide) If I might turn  
18 to the next viewgraph on program issues highlights.  
19 Can you beam it up, Scotty? Well, let me get started  
20 on it while it's coming up.

21 The first bullet it need for legislation.  
22 I've already mentioned this in the context of the need  
23 for us, in our opinion, to fulfill the mission  
24 assigned to us by Congress to get back on the mountain  
25 and extend our activities with respect to evaluating

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1 whether or not the site is suitable for a repository.

2 Back in October, on October 11, the  
3 Secretary wrote a letter to Senator Johnston in the  
4 context of an ongoing dialogue between himself and the  
5 Senator with respect to this issue, in which he  
6 requested the Senator's assistance in enacting  
7 legislation that would enable us to get back on the  
8 mountain and sustain our activities without the  
9 obstructionist tactics that we're encountering from  
10 the state.

11 I can simply say at this point that we  
12 have under consideration an aggressive action plan to  
13 implement that request, looking at the potential and  
14 administration-based proposed legislative action which  
15 would get us going. To me it's just unconscionable  
16 that we could sit there for five to eight years while  
17 this obstructionism continues, which is the stated  
18 policy of the state at this point. I think it's  
19 incumbent upon us as the office, as the agent of the  
20 Congress' mission, to proceed with this program as  
21 effectively as possible. I'm simply encouraging and  
22 assisting this activity as much as I can to get us  
23 going.

24 Another thing that happened during the  
25 past year is represented by the second bullet. The

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1 National Academy of Sciences report on rethinking the  
2 program, which had recommendations for all  
3 participants, we have responded to them. We sent them  
4 a written response back around the 1st of November and  
5 then just last Friday Tom Isaacs and I met with the  
6 Board of the Academy out in California and we had a  
7 very productive dialogue about our response and  
8 updated information such as I'm presenting to you here  
9 today.

10 I had previously indicated, and the  
11 Secretary had indicated that in the two years between  
12 when the meeting was held that was the source of that  
13 report, that in fact particularly during this past  
14 year, a lot of the recommendations have been already  
15 underway in terms of implementation and we've extended  
16 those. Those were the kinds of things that we talked  
17 with the Board about last Friday. I think we have  
18 very good rapport and acceptance between the Board and  
19 ourselves with respect to the implementation of their  
20 recommendations within the Department.

21 With respect to the regulatory framework,  
22 I'm referring here, of course, to the workshop that  
23 was held under the National Academy's auspices back  
24 in September that raised issues concerning the  
25 framework with respect to the regulations from 40 CFR

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1 Part 191 from the EPA and, of course, the 10 CFR Part  
2 60 regulations. The Department is, of course,  
3 participating as appropriate in activities associated  
4 with a revisiting of the regulatory framework,  
5 particularly of course with respect to the EPA's  
6 actions in response to the court remand to consider  
7 revision of their regulations.

8 I would comment that it's very important  
9 to us that there be a coherent structure of regulatory  
10 standards and defined methodologies for compliance  
11 with those standards. This is the area in which we,  
12 as responsible and responding party, would expect to  
13 contribute as appropriate, to development of  
14 appropriate methods of compliance with those standards  
15 as they are established. So, we will anticipate  
16 working with both regulatory bodies as activities in  
17 this area proceed.

18 The ball is in other courts. We're going  
19 to participate as appropriate as things happen.

20 In a way closely related to that, the last  
21 bullet on this viewgraph, interactions with WIPP,  
22 simply indicate that we're well aware of the fact that  
23 there's a lot that's in common between ourselves and  
24 WIPP. In fact, about the only thing that's not common  
25 is the fact that we will be licensed by the Commission

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1 and they won't. Other than that, we share major  
2 issues in transportation, in terms of performance  
3 assessment, in terms of human intrusion as a key issue  
4 in assessment, and in terms of the programs for  
5 affirmation or testing of the suitability of the  
6 locations as a repository.

7 Let me simply say here that we are in  
8 dialogue with Mr. Duffy's organization who has  
9 responsibility for WIPP and we are taking advantage  
10 of the commonalities and interacting with them as  
11 appropriate and possible.

12 (Slide) My last viewgraph, the next  
13 viewgraph, simply lists some of the expected  
14 accomplishments during this calendar year. We expect  
15 to initiate the monitored retrievable storage  
16 conceptual design. We anticipate that through one  
17 means or another we will get back on the mountain and  
18 renew and expand our site evaluation activities. As  
19 I previously indicated, I will in the near-term, in  
20 the not too distant future, select the preferred  
21 exploratory shaft facility design from among those 34  
22 alternatives.

23 We will be selecting these strategic  
24 principles as a result of these workshops and the  
25 Department's action and feedback and further

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1 interaction with the participants in those workshops.  
2 The strategic principles will be the foundation for  
3 the mission implementation plan, as I called it, and  
4 the mission plan amendment which we expect to issue  
5 in draft late this year. I would comment that that  
6 is not schedule driven in my opinion, that is quality  
7 driven. As we go through this process of selecting  
8 the principles and building them into the mission  
9 implementation plan, if it turns out that we need more  
10 time to get it right, we'll take more time to get it  
11 right. I hope to have the draft out for public  
12 comment by early fall. But basically we'll want to  
13 make sure we've got a sound foundation for our  
14 activities going forward.

15 So, the strategic principles in the  
16 issuance of the mission plan amendment are very  
17 closely related, expected to be accomplished this  
18 calendar year. Then, as I previously indicated, we  
19 will be, as soon as we're ready, I hope it will be in  
20 the April or May time frame, present probably through  
21 a forum such as would be provided by the Technical  
22 Review Board our initial thoughts on how we would  
23 evaluate site suitability and then interact and  
24 develop that with the external parties.

25 Those conclude my comments at this point.

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1 I thank you very much for the opportunity to be with  
2 you this morning.

3 CHAIRMAN CARR: Thank you.

4 DOCTOR BARTLETT: I'd be glad to answer  
5 any questions you have.

6 CHAIRMAN CARR: Questions, Commissioner  
7 Remick?

8 COMMISSIONER REMICK: Several, although  
9 Doctor Bartlett has already answered several that I  
10 had.

11 Several weeks ago I attended a weekend  
12 workshop in Virginia on the subject of high-level  
13 waste and Mr. Peters ably represented your office.  
14 One of the pleasant surprises from my standpoint was  
15 there was very little criticism of the NRC. But even  
16 perhaps more surprising was the fact there seemed to  
17 be a very strong consensus amongst representatives  
18 there of groups that work closely with you that there  
19 have been a lot of positive changes in the office  
20 under your direction. First of all, I'd like to  
21 compliment you on that because there were a number of  
22 indications from people that they saw tremendous  
23 change and improvement in the program.

24 Along that line, you've referred to some,  
25 but in your paper a number of changes for improvements

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1 in the program have been made. Could you select the  
2 top two or three that you think have been the biggest  
3 changes from the standpoint of getting the program  
4 going?

5 DOCTOR BARTLETT: There are three that I  
6 think are vitally important because, as I see it right  
7 now, our responsibility is to lay the foundation for  
8 the long-range activities with respect to storage and  
9 with respect to evaluating the suitability of Yucca  
10 Mountain.

11 The key things in that foundation, in my  
12 mind, are the management support improvement or  
13 management systems improvement strategy, which will  
14 assure that as we proceed we have the requirements all  
15 structured as we go and that that keeps pace with  
16 evolution of information and other things.

17 The other one is the strategic principles.  
18 Another one is the strategic principles as a  
19 foundation for our activities.

20 The third one is basically, I hope,  
21 represented by the credo, an installing and  
22 inculcating of a strong sense of mission and  
23 responsibility, then that we're all working toward  
24 this fulfillment of national responsibility with a  
25 strong sense of resolve for accomplishment and focus

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1 and aim to get the job done that has been assigned to  
2 us by Congress. I try as much as I can to keep  
3 sending that message to the staff and to everyone.

4 We are trying as responsibly and  
5 effectively as we can to fulfill the mission that's  
6 been assigned to us by Congress as the mission stands  
7 right now. Congress has the power to change the  
8 mission. But as it stands right now, we have a  
9 clearly defined one and we are trying to work as  
10 effectively as we can to fulfill that.

11 COMMISSIONER REMICK: Speaking of your  
12 credo, just yesterday around this table we were  
13 talking about, under Commissioner Rogers'  
14 encouragement the Commission develop the principles  
15 of good regulation. We were discussing around this  
16 table what we might do with it. I think you've just  
17 given us an example of something we might do with our  
18 principles.

19 CHAIRMAN CARR: You mean give it to DOE?

20 DOCTOR BARTLETT: We'll trade.

21 COMMISSIONER REMICK: Why not?

22 You mentioned the MRS. What is the status  
23 of site selection in MRS? Is there anything going on  
24 there that you can speak of?

25 DOCTOR BARTLETT: Well, the negotiator is

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1 developing the -- I think the way I could put it at  
2 this point, is developing the basis for site selection  
3 through interactions with potential host states with  
4 details I'm not privy to. He's being very careful to  
5 retain to the priorities of his office and  
6 prerogatives of his office those activities. We are  
7 acting totally independently of that. We have not had  
8 any significant communication about where he is with  
9 respect to --

10 COMMISSIONER REMICK: But you don't have  
11 a separate process underway?

12 DOCTOR BARTLETT: No. No, we don't.

13 CHAIRMAN CARR: Can I jump into that one?

14 COMMISSIONER REMICK: Yes, surely.

15 CHAIRMAN CARR: Is your strategic  
16 principles proceeding on the idea that the MRS is  
17 going to be delinked from the repository?

18 DOCTOR BARTLETT: Yes, it is. It's our  
19 expectation that --

20 CHAIRMAN CARR: What are the odds of that  
21 happening?

22 DOCTOR BARTLETT: I think very high. We  
23 had had before the negotiator was confirmed and  
24 underway, we'd had indications, none of them formal  
25 and none of them with the, let's say, state authority

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1 behind them, but indications that there might be  
2 states that would possibly at times that might be  
3 interested in being the host of the facility,  
4 especially if, as the negotiator is pursuing it, an  
5 approach involving not only the site but other  
6 socioeconomic activities that could be beneficial were  
7 included in the package. So, I'm fundamentally  
8 optimistic that he will be successful.

9 And the goal, as far as we're concerned,  
10 in order to meet our 1998 begin acceptance date, is  
11 for him to complete the activities with respect to  
12 finding a host state and then for the Congress to  
13 bless that package no later than the end of calendar  
14 '92. And if that schedule is met, we can meet the  
15 schedule of 1998. That's our best estimate at this  
16 point, and we would anticipate that the package that  
17 the negotiator would produce with the candidate host  
18 would include the delinking so that we would not have  
19 to, as a separate activity, ask the Congress to modify  
20 the amendments in order to remove that linkage that's  
21 there right now. In other words, the package would  
22 accomplish that goal without a unique activity.

23 COMMISSIONER REMICK: You address the  
24 question of EPA standards and NRC regulations by very  
25 cautiously and diplomatically and politely talking

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1 about the need for coherence between those. I wonder,  
2 do you have any more specific or concrete  
3 recommendations either to us in the NRC or any  
4 comments on the EPA standards more specific than that?

5 DOCTOR BARTLETT: At this time, no. I'm  
6 aware that there's dialogue ongoing between the  
7 Commission staff and between the EPA staff, and I'm  
8 aware that the EPA is investigating the possibility  
9 and the desirability of using a negotiated rulemaking  
10 as a basis for their regulations, revisions.

11 There are many issues on the table at this  
12 point. They're being talked about and I think that's  
13 healthy and that's the right thing at this stage. I  
14 think we've learned a lot. I've observed that -- you  
15 know, the Lord didn't tell any of us how to do this  
16 right the first time. We've had an amendment to the  
17 Waste Policy Act. There's a change there. We've had  
18 revisions or potential revisions to the regulatory  
19 framework on the table. We've had significant  
20 revisions to our program. All of the major factors  
21 involved in this thing are on a learning curve.

22 Right now, in my opinion, the regulatory  
23 framework is in fact ripe for review to see if it  
24 really makes sense. In the last couple of years,  
25 through the Commission staff's reviews of the site

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1 characterization plan and the technical exchanges  
2 we've had, our staff has had with your staff, there's  
3 been a lot understood, a lot of understanding of the  
4 quality, the depth and scope of the issues associated  
5 with this program, regulatory compliance, proof of  
6 safety, et cetera, that has been -- it's just been  
7 exponential recently. And so, we have a new basis  
8 with which to look at the regulatory requirements, the  
9 regulatory structure, the compliance requirements, et  
10 cetera.

11 I would not at this point make any  
12 specific suggestions. Keep talking about it, but set  
13 as a goal coherence and reasonableness and  
14 appropriateness of the compliance rulemakings which  
15 affect us.

16 COMMISSIONER REMICK: Thank you.

17 That's all, Mr. Chairman.

18 CHAIRMAN CARR: Commissioner Curtiss?

19 COMMISSIONER CURTISS: Let me pick up on  
20 that last point and see if I can't get a clearer sense  
21 of your perspective on the regulatory framework.

22 You had an interesting interview in  
23 Nuclear News just recently -- November, I think, of  
24 this year -- that talked about the issues as you saw  
25 them. And as I read that interview, you had what

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1 appeared to be three basic issues that you discussed  
2 in the regulatory context: the stringency of the  
3 standards, the probabilistic character of the EPA  
4 standard, and then the connection between the  
5 implementing regulations here at this agency and those  
6 EPA standards.

7 Focusing first on the stringency question,  
8 last year when Leo Duffy was here -- Commissioner  
9 Remick alluded to that -- he commented that there  
10 needs to be a scientific basis for the standards, and  
11 I think he meant by that not just the EPA standards  
12 but the NRC regulations as well, and observed that at  
13 that time he didn't think that existed.

14 You noted that there's been considerable  
15 attention devoted to the issue and a lot of  
16 developments over the last year or so. I guess,  
17 breaking the issue down into those discrete parts --  
18 the stringency of the standard, the probabilistic  
19 character, and the effort to implement that standard  
20 in Part 60, 10 CFR -- can you give us any more detail  
21 than you've provided on what you see as perhaps the  
22 strengths and maybe the weaknesses of the existing  
23 approach?

24 DOCTOR BARTLETT: I can offer some  
25 comments on some of those aspects. I think it would

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1 be useful if we had, within that framework of both the  
2 EPA and the NRC standards, regulations, an agreed-to  
3 sound policy basis and that we revisit not only the  
4 table and the use of the integrated release limits,  
5 et cetera, within the EPA standards, but that policy  
6 basis, the 1,000 extra deaths, et cetera, which is the  
7 source of the stringency. Everything flows from that.  
8 Is that appropriate?

9 We need some kind of a policy basis. Is  
10 it that one? Is it some kind of a scientific basis?  
11 I think there are alternatives that can be considered  
12 and at present I don't have any preference for any of  
13 them. And I might observe that historically, when you  
14 look at expected performance of candidate repository  
15 sites that have been under consideration, if they  
16 don't jump around in the future, if they're  
17 undisturbed and nature behaves in the future like it  
18 has in the past, any of them under prudent design and  
19 siting would meet those stringent standards. That's  
20 not in itself at issue.

21 I don't think we should make up the rules  
22 as we go along just to match a site or anything like  
23 that. We can't do that. We need to assure ourselves  
24 across the board that we have a sound policy basis and  
25 then, as much as possible, build on that scientific

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1 information as a basis for standards and methodologies  
2 for compliance.

3 COMMISSIONER CURTISS: Let me continue on  
4 that line. The probabilistic character of the  
5 standards is something that I know you've taken a look  
6 at. This agency over the years, going way back to the  
7 late '70s and early '80s, focused on that question in  
8 particular out of a concern that the probabilistic  
9 character of the standard not only was different than  
10 the way we license things around here, using a  
11 deterministic approach to reactor licensing, but  
12 appeared to contemplate a quantitative licensing  
13 standard that may be beyond our ability to demonstrate  
14 in a formal adjudicatory context. And it was out of  
15 that concern that over the years beginning in about  
16 '82 and '83 we sought some assurance from EPA in the  
17 context of their standards that this probabilistic  
18 framework would not require what we call proof in the  
19 ordinary sense, that it was something -- it was  
20 reasonable assurance.

21 I did note in your comments, I guess, on  
22 the EPA standard -- I'd like to follow up on this --  
23 that you sent in August -- I'll just read the  
24 statement. "Also, in the years since Part 191 was  
25 first promulgated, the qualifying statements" -- the

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1 references that I mentioned that were developed  
2 between the two agencies -- "in the standard relative  
3 to the degree of proof to be required have been  
4 interpreted so as to render them virtually  
5 meaningless."

6 I guess I'd appreciate any expansion that  
7 you have on that, recognizing of course that that set  
8 of qualifying standards on the degree of proof was  
9 something that was critical in terms of our assessment  
10 of the ability to implement the standard. What have  
11 you seen happening from your perspective?

12 DOCTOR BARTLETT: Well, the picture has  
13 become very muddled as we've started to address the  
14 reality of dealing with probability as it was broadly  
15 defined or described in the preamble, essentially, to  
16 191.

17 I see probability as an alternative tool  
18 for judgment and as an attempt to try and quantify it  
19 and deal with it in this case in a situation where we  
20 must make decisions or findings under uncertainty.  
21 There will inevitably be uncertainty.

22 In my mind, the question is does the  
23 probabilistic approach, whatever it turns out to be,  
24 aid the making of the judgment effectively in  
25 comparison with any other alternatives? Is it truly

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1       beneficial? And when you get into the details of  
2       trying to construct, defend, and then analyze and pass  
3       judgment as a regulatory body on a complement, a CCDF,  
4       does that process help you in any way, all the parties  
5       in any way in comparison with alternative approaches  
6       to demonstration of compliance? I think that's an  
7       open issue at this point. I would like to see it come  
8       at from that viewpoint, that this is a means, a tool  
9       for facilitating judgment under principles of  
10      reasonable assurance, if you will, in this particular  
11      situation.

12               COMMISSIONER CURTISS: Let me see if I can  
13      restate it in terms that the lawyers in the Agency  
14      would understand when they get to that licensing  
15      framework.

16               You, I guess, would view the probabilistic  
17      evidence that's developed as merely that, evidence  
18      that would be adduced and offered, I guess, to support  
19      the conclusion that your application, the repository  
20      that you propose, would meet the licensing standard.

21               And the licensing standard, I guess,  
22      you're saying what, would be the subsystem performance  
23      criteria? In theory, that's the way I envision this  
24      process working, that the Agency was charged with  
25      setting up the implementing requirements to translate

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1 the health and safety objective into the kind of  
2 licensing framework that we would then apply in our  
3 adjudicatory proceeding. I want to make sure I  
4 understand what you're saying.

5 DOCTOR BARTLETT: Yes. Basically, with  
6 respect to the sub -- all of the above, if you will,  
7 the subsystem standards, the  $10^{-5}$ , and the 300 to  
8 1,000 years or greater lifetime, for example, and of  
9 course the Part 191 integrated release limits, I think  
10 it would be both prudent and advisable to address all  
11 those with trade-offs. Because, as I know you're  
12 aware, you can comply with 191 but not the subsystems  
13 standards. I mean, it's entirely possible as it  
14 stands right now that you can do that.

15 I think there needs to be the integration  
16 of those things with regard to the possibilities,  
17 opportunities and benefits of trade-offs, not just  
18 defense in depth and not just the concept of -- well,  
19 the basis for it would be performance allocation.  
20 But, to look at the trade-offs and how they might  
21 contribute both to assessment of the judgments of  
22 compliance and to the facilitation of the basis for  
23 that judgment.

24 COMMISSIONER CURTISS: Okay. Let me go  
25 on.

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1 CHAIRMAN CARR: Well, let me jump into  
2 that just a minute. I hear what you're saying there,  
3 but when I look at your site suitability evaluation  
4 in your statement here you said that the criteria  
5 would be conservative and will not use the favorable  
6 performance of the engineered barrier system to  
7 compensate for deficiencies, which doesn't seem to me  
8 to be what you just got through saying, but maybe I  
9 misread it.

10 DOCTOR BARTLETT: No. That's specifically  
11 with respect to the determination of whether or not  
12 a site is suitable, essentially. It's an interesting  
13 question. It came up in our workshop.

14 Can you separate the features of the  
15 engineered barrier system from the site features? The  
16 integration of those is a historic way of looking at  
17 the performance of a repository system in a geologic  
18 setting. Can you separate the repository from the  
19 site so that you are truly evaluating the suitability  
20 of the site, the geologic setting? I describe the  
21 determination of that as an unnatural act, because the  
22 way things are set together you have to look at the  
23 system and the interactions.

24 But, for our purposes for site suitability  
25 evaluation, you need to try and make that separation.

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1 So, when we go and look at a site such as Yucca  
2 Mountain and we look at the potentially adverse  
3 conditions and the favorable conditions, we're looking  
4 at the factors within Part 60, paragraph 122, and in  
5 Part 960 that deal with the site features and not the  
6 opportunity to override any weaknesses you see as a  
7 result of the engineered features you might put in the  
8 repository. We're having an interesting time with  
9 this in addressing this and developing our methodology  
10 for the determination.

11 CHAIRMAN CARR: I hope you just don't put  
12 yourself in the state Michigan put themselves in in  
13 the low-level waste site.

14 COMMISSIONER CURTISS: Let me -- this is  
15 an important issue and I don't want to spend a lot of  
16 time here on it because I know some of the efforts  
17 that you have underway will I think shed additional  
18 light, including this question of how you determine  
19 suitability as the first step under your guidelines  
20 as opposed to the licensing standards, but at the same  
21 time understanding that you've described that as a  
22 continuum from where we are today to where you all  
23 want to be.

24 I just have a handful of things here that  
25 I want to go through. You mention the experience

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1 that's been gained with WIPP. Understanding that  
2 that's not directly in your shop, I wonder if you  
3 could comment on whether you see any particular  
4 lessons that have been drawn from the WIPP experience  
5 and maybe particularly on the question of how we treat  
6 human intrusion.

7 DOCTOR BARTLETT: The lesson is it's a big  
8 problem. It is probably the problem. It is certainly  
9 the problem for WIPP. And it may well be the problem  
10 for Yucca Mountain.

11 If we can determine with reliability that  
12 the potential for future dynamic behavior at Yucca  
13 Mountain is insignificant -- in other words, it would  
14 be a well-behaved repository system such as you might  
15 expect in the salt environment like the WIPP site --  
16 then we have essentially or potentially the same  
17 fundamental issue of intrusion. How do you deal with  
18 it? And at present, I certainly don't have the answer  
19 to that question. It's a very important question.  
20 It is certainly different as a problem from trying to  
21 address the future dynamic behavior, trying to assess  
22 or develop a histogram for future seismic activity,  
23 et cetera. It's a very different kettle of fish and  
24 it has to be, I think, addressed in a very different  
25 way. It's vitally important.

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1 COMMISSIONER CURTISS: Is it akin to the  
2 sabotage issue and how we address and license nuclear  
3 plants?

4 DOCTOR BARTLETT: Basically, yes.

5 COMMISSIONER CURTISS: Something that,  
6 because of its nature ought to be treated separately?

7 DOCTOR BARTLETT: The question you get as  
8 a difference is whether it's deliberate or  
9 inadvertent. If there has been loss of institutional  
10 control, then it's quite likely -- an assumption in  
11 the past has been that it would be inadvertent. Folks  
12 are just out there. The prospectors are looking for  
13 gold and they're going to drill and they don't know  
14 that there was a different kind of latent asset put  
15 in that ground.

16 COMMISSIONER CURTISS: All right. Are  
17 there any other lessons that you've seen from WIPP  
18 that suggest things that we ought to take a look at  
19 as we proceed?

20 DOCTOR BARTLETT: Well, other issues that  
21 we are interacting with them very strongly on, of  
22 course, are transportation really, the transportation  
23 system, emergency response, all these issues. Of  
24 course, that's been taken over, if you will, by the  
25 new DOT activities which will govern many of us in

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1 those respects.

2 The really key thing in my mind has been  
3 the fact that the people at Sandia in particularly  
4 have been just working over this issue of the  
5 performance of the system and they keep butting up  
6 against this intrusion issue and have thoroughly  
7 ventilated the methodologies and the issues associated  
8 with the performance assessment and we can go to  
9 school on that.

10 COMMISSIONER CURTISS: Okay. The ACW was  
11 in the other day and briefed us on the carbon-14  
12 issue, brought up to speed on that. I know your  
13 people have taken a look at that issue and scrubbed  
14 it fairly carefully. Based upon your current  
15 understanding of that issue, does it look like some  
16 change in the EPA standard in the NRC regulation on  
17 that particular point is appropriate or is it too  
18 early to tell?

19 DOCTOR BARTLETT: If I may, I'd like to  
20 ask Dwight or Linda to comment on that.

21 CHAIRMAN CARR: Would you go to the  
22 microphone and identify yourself, please?

23 MR. GERTZ: It's Carl Gertz again.

24 As you are well aware, we have been  
25 interacting with the ACNW and, of course, with your

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1 staff. We are coming to the conclusion that perhaps  
2 the standard does need to be addressed or recognize  
3 the repository in the unsaturated zone and perhaps  
4 therefore doing something to the standards. So, it's  
5 been our thoughts that we will be -- we have provided  
6 the EPA comments, I believe, in that area and we will  
7 certainly be pursuing that as the rulemaking comes  
8 out.

9 COMMISSIONER CURTISS: Okay. I may have  
10 one other question for you here, depending upon --

11 MR. GERTZ: Okay. I just wanted to expand  
12 to Commissioner Remick's first statement about our  
13 interaction with ACNW. Here's one area that we  
14 specifically have had quite a bit of interaction with  
15 them.

16 I would like to say though over the course  
17 of the last year, our interaction with your staff to  
18 me has been exemplary, that we have reached, as John  
19 pointed out, mutual understanding of some of the  
20 technical issues. I think between working with your  
21 staff and the ACNW, we are trying to narrow the  
22 uncertainty in some issues and hopefully reach issue  
23 closure as we proceed.

24 COMMISSIONER CURTISS: All right. Duffy  
25 commented last year that there was a need for some

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1 flexibility in the relationship between the subsystem  
2 performance criteria, and in particular commented on  
3 your interest in relying on the package that may go  
4 beyond 1,000 years. I know our staff has come up with  
5 a position that addresses that issue and I guess the  
6 question that I have for you is does that provide the  
7 kind of flexibility that you perceive as necessary,  
8 A, and B, would that position benefit from formal  
9 codification in some sort of legally binding manner?

10 DOCTOR BARTLETT: Yes and yes.

11 COMMISSIONER CURTISS: Okay.

12 DOCTOR BARTLETT: I think it's a very  
13 important step and it would benefit. My term for  
14 flexibility here today has been essentially trade-  
15 offs. I mean by that the same sort of thing, the  
16 opportunities to allocate defense in depth, et cetera,  
17 and margins to compliance in accord with what you find  
18 in the system and what you can beneficially do with  
19 respect to engineer barrier design.

20 I might point out, for example, that yes,  
21 the idea of the robust container sounds really great  
22 and that came up at the workshop we had on strategic  
23 principles. And quite properly, the industry chimes  
24 in and says, "That's going to cost a lot of money. Is  
25 it worth the candle?" So, these are the kinds of

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1 trade-offs we have to look at eventually.

2 COMMISSIONER CURTISS: I thought one of  
3 the more interesting comments at the symposium at the  
4 Academy, and I raise this in the context of your  
5 examination of alternative licensing strategies, was  
6 the suggestion that the licensee determination that  
7 we are required to make ought to be made or could more  
8 beneficially be made prior to site closure, after you  
9 have the benefit of up to, I guess, 50 years of  
10 experience with the waste in the geologic form that  
11 you decide to pursue rather than trying to make that  
12 decision prior to construction of the repository  
13 without any of that experience.

14 Now, if I understand what was proposed and  
15 what the Department is doing at WIPP, you're  
16 essentially doing that with the WIPP facility, as I  
17 understand it. There will be a limited period of time  
18 with the waste in place now under the EPA exemption  
19 where I gather you're seeking to get experience on the  
20 behavior of that waste in the salt form and  
21 particularly gaseous releases.

22 Is that concept of making the licensing  
23 determination recognizing that this facility will be  
24 licensed at a later stage in the process after gaining  
25 the benefit of whatever period of retrievability you

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1 should decide to establish something that you are  
2 pursuing or the is an option on your alternative  
3 licensing strategies agenda?

4 DOCTOR BARTLETT: It is an option and of  
5 course the basic concept behind it is the idea of  
6 expanding the database if you can effectively before  
7 you make a final determination and essentially  
8 incrementally working your way toward the affirmation  
9 of licenseability. Yes, that concept is one of the  
10 things we have under consideration.

11 COMMISSIONER CURTISS: Just a handful of  
12 quick ones here that I wanted to follow-up on.

13 I guess I was confused about the dates  
14 here in terms of the need for legislation. Your  
15 prepared statement indicates that it would take as  
16 much as two years to get the permits if you pursued  
17 the administrative and legal routes.

18 DOCTOR BARTLETT: Yes.

19 COMMISSIONER CURTISS: What's the five to  
20 eight number?

21 DOCTOR BARTLETT: The permits at issue  
22 under the extant case is just the three permits that  
23 are at issue in the present case. We need 30 some  
24 permits and essentially the opportunity is there and  
25 the state has said they will exercise it. Every time

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1 we come up with a permit, they're going to do the same  
2 thing over again. Their statement on the record is,  
3 and it's quite correct, that within the framework of  
4 the cases that are under consideration right now, they  
5 can string it for that long.

6 COMMISSIONER CURTISS: Your estimate is  
7 five to eight years to get through all of them then?

8 DOCTOR BARTLETT: Yes.

9 COMMISSIONER CURTISS: And so --

10 DOCTOR BARTLETT: The appeal processes and  
11 every legal device that's available.

12 COMMISSIONER CURTISS: Critical path then  
13 now in terms of access to the site is the legislative  
14 initiative.

15 DOCTOR BARTLETT: It would be.

16 COMMISSIONER CURTISS: Okay.

17 DOCTOR BARTLETT: That's right.

18 COMMISSIONER CURTISS: Can you say a word  
19 or two on where you stand on the use of the dual  
20 purpose casks, a couple of comments in the statement  
21 in terms of where you are and when you'd like to come  
22 to the Commission, the staff, with your information  
23 for certification? Are you pursuing the concept of  
24 dual purpose casks?

25 DOCTOR BARTLETT: We are at present, of

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1 course, including it in part of our program  
2 activities. We have going right now, in part as a  
3 result of or in concert with the reorganization to  
4 bring together spent fuel acceptance, storage and  
5 transportation. What we're basically looking at on  
6 an integrated basis is what kinds of transport,  
7 storage technologies will serve the program best in  
8 terms of meeting the 1998 goal and addressing the  
9 expected priorities of receipt as a function of time,  
10 reactor locations.

11 Of course, we don't know where a storage  
12 facility would be yet. So, there are many open  
13 issues. But what we're trying to do is synthesize all  
14 the factors involved in the logistics in order to  
15 identify which technology, such as dual purpose casks,  
16 might be beneficial.

17 Frankly, my guess at this point is that  
18 we will need alternative technologies, probably two  
19 or three kinds of things, and a dual purpose might be  
20 a long-range and effective one. We're, as I said,  
21 still in the process of assessing what that will be.

22 CHAIRMAN CARR: I would say a lot of the  
23 dual purpose depends on whether you get an MRS or not.

24 DOCTOR BARTLETT: Could well, yes. And  
25 also on essentially the design and operating

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1 conditions for the MRS in which the host may have a  
2 lot of say.

3 COMMISSIONER CURTISS: I did notice that  
4 you are taking a look at the option of cooling the  
5 fuel for a greater length of time. Of course, with  
6 the schedule adjustments that we've seen, the  
7 utilities that --

8 CHAIRMAN CARR: It's working out right.

9 COMMISSIONER CURTISS: -- the utilities  
10 are increasingly --

11 DOCTOR BARTLETT: An inactively attained  
12 result, right?

13 COMMISSIONER CURTISS: Right. Utilities  
14 that we regulate are increasingly looking at what  
15 their options are as their spent fuel pools fill up  
16 and as they look at dry cask storage. I know several  
17 months ago, maybe over a year ago, the Commission  
18 encouraged the Department to take a look at dual  
19 purpose casks as one mechanism that might facilitate  
20 some streamlining of the process. I appreciate that  
21 you're doing that.

22 DOCTOR BARTLETT: Within less than two  
23 years, according to information we've received, many  
24 of the utilities will have to decide whether or not  
25 they're going to install on-site storage facilities.

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1           Let me take advantage of that opportunity  
2           for a short statement about what I would call non-  
3           management. That is, as you know, a good many people  
4           are proselytizing the case of just leave the stuff at  
5           the reactors. That is non-management. It is non-  
6           fulfillment of our responsibility under our credo and  
7           our mission as assigned by the Congress. It also,  
8           unless there's some sort of control, could lead for  
9           chaos when you do finally decide to manage it if every  
10          reactor goes off and does its own thing with respect  
11          to the storage technology it might choose to  
12          implement. There has to be some effective form of  
13          management.

14                 Now, as a practical matter, a fair amount  
15          of inventory will over a reasonably long period of  
16          time be stored at reactors. But we have to be moving  
17          forward with the mission and the storage facility away  
18          from the reactors is an essential part of this system  
19          and will facilitate the total implementation.

20                 COMMISSIONER CURTISS: I certainly share  
21          that view. We have looked at the question of on-site  
22          storage now I guess about every five years under the  
23          waste confidence proceeding. Of course we've  
24          determined most recently that spent fuel can be stored  
25          on-site for an extended period of time without any

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1 major technical problems.

2 But having said that, from the standpoint  
3 of the obligations and responsibilities that utilities  
4 have to run their reactors and to marshall their  
5 limited resources for that purpose and in terms of the  
6 overall program objective, I do share your view that  
7 the purpose of this program ought to be to move the  
8 fuel away from what today is a safe option, no  
9 question about it, but clearly not a preferable option  
10 in terms of the final outcome.

11 That's all I have, Ken.

12 CHAIRMAN CARR: I'll just be short here.  
13 I notice --

14 COMMISSIONER ROGERS: I have a few  
15 comments sometime.

16 CHAIRMAN CARR: Excuse me. Do you really  
17 want to make a few?

18 COMMISSIONER ROGERS: Just a couple.

19 CHAIRMAN CARR: I lost track.  
20 Commissioner Rogers?

21 COMMISSIONER ROGERS: Just a couple of  
22 little points.

23 I wanted to compliment you on your MSIS  
24 approach because it seems to me that taking this total  
25 systems approach is really what's terribly important

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1 here. It's the most difficult kind of thing to do in  
2 any of these endeavors and yet it is the most  
3 important. I read in your prepared remarks the  
4 breadth of that and it seemed -- and I was very  
5 impressed with it, taking into account the unique  
6 institutional and public elements along with the  
7 technical ones.

8 It's so often that we see that those are  
9 the big problems and that even though we may have  
10 satisfactory technical solutions, if they're not  
11 acceptable to the public then they're valueless and  
12 that constant interplay between those two within the  
13 envelope of the total systems analysis, it seems to  
14 me, is absolutely essential here and it's probably one  
15 of the things that has been missing in the early  
16 stages that have given rise to some problems.

17 So, I really wanted to compliment you on  
18 that. It seems to me a very important step forward,  
19 but -- or not but -- and I have a question that part  
20 of that involves looking at the relevant regulatory  
21 requirements that have to be met.

22 I note that in your report that you  
23 mentioned that you have had meetings with the Center  
24 for Nuclear Waste Regulatory Analysis. Have you  
25 discussed your analyses of regulatory requirements

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1 that must be met with the work that they've been doing  
2 in this area because that's been a very important  
3 activity of that center and approached in a quite  
4 comprehensive way, the total systems engineering  
5 approach? Has that dialogue that you've had with them  
6 involved comparison of what you believe to be the  
7 relevant regulatory requirements and what their  
8 analyses are?

9 DOCTOR BARTLETT: My sense is we're doing  
10 very similar things. I'd like to ask the staff again  
11 to respond to that.

12 MR. SHELOR: Yes, sir. Dwight Shelor.  
13 I just want to say that we have discussed this on  
14 several occasions but we have planned a technical  
15 exchange or interaction with the Center in January.  
16 We're looking forward to that to make a rough  
17 comparison -- or not a rough, but a comparison of both  
18 our functional analysis and the requirements that  
19 we've established for those.

20 The main differences are that we  
21 anticipate the Center has done a functional analysis  
22 of the disposed waste of the repository system. We  
23 are much broader scoped, including transportation and  
24 MRS and the programmatic functions.

25 COMMISSIONER ROGERS: Very good.

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1 I noted also that you mentioned in your  
2 site suitability evaluation portion of your report  
3 that you're looking forward to an independent external  
4 review of the evaluation process and mention the  
5 possibility of that taking place under the auspices  
6 of organizations such as the National Academy of  
7 Sciences. Where does that stand now, that  
8 independent, external review?

9 DOCTOR BARTLETT: Well, it's an objective  
10 rather than the fact.

11 COMMISSIONER ROGERS: Yes.

12 DOCTOR BARTLETT: It's part of our plan  
13 with respect to developing the methodology. As I  
14 mentioned, we had our first internal workshop to scope  
15 and ventilate the issues associated with it. That is  
16 the basis for a proposed plan of action which is  
17 coming to me very shortly. Part of that plan will be  
18 once we have a strawman of how we think we might  
19 proceed, to put that on the table publicly for  
20 external review. So, that action is to be sometime  
21 in the future, hopefully I think around April. But  
22 it's a gleam in the eye rather than an accomplished  
23 fact at this point.

24 COMMISSIONER ROGERS: Well, how do you see  
25 proceeding on that? How will you come to a conclusion

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1 as to who will do that review?

2 DOCTOR BARTLETT: Well, I would hope --  
3 my present thinking is that the Technical Review Board  
4 or the National Academy of Sciences or both or others  
5 might provide essentially the open forum into which  
6 we would present our proposed approach.

7 COMMISSIONER ROGERS: I see.

8 DOCTOR BARTLETT: And then they would  
9 provide the opportunity for others such as your staff  
10 and others to comment on the proposal.

11 COMMISSIONER ROGERS: But you'd expect  
12 them to take the initiative?

13 DOCTOR BARTLETT: To have the interaction?  
14 No, we would take the initiative. I would expect to  
15 ask the TRB or the Academy to serve this role.

16 COMMISSIONER ROGERS: That's all.

17 CHAIRMAN CARR: You sure?

18 COMMISSIONER ROGERS: Yes.

19 CHAIRMAN CARR: Take your time.

20 COMMISSIONER ROGERS: Thank you.

21 CHAIRMAN CARR: I noticed in your  
22 forwarding letter over here most of your new  
23 management team, and I realize you just put it in  
24 place November the 5th, it says, are listed as acting.  
25 Is that just the paperwork problem or --

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1 DOCTOR BARTLETT: Yes, that's due process.

2 CHAIRMAN CARR: Okay.

3 DOCTOR BARTLETT: As I have said,  
4 reorganization of the federal government is not an  
5 act, it's a process.

6 CHAIRMAN CARR: Okay.

7 DOCTOR BARTLETT: We're still in it in  
8 terms of --

9 CHAIRMAN CARR: In the legislation area,  
10 I didn't get the -- who's going to draft that  
11 legislation? Are you drafting it or is it going to--  
12 do you expect it to come out of the Congress or the  
13 White House or --

14 DOCTOR BARTLETT: That's under  
15 consideration. Some time ago, in fact back in May,  
16 Senator Johnston asked me to be the agent through  
17 which the Administration proposes legislation.

18 CHAIRMAN CARR: I've noticed on the Hill  
19 recently a current states' rights approach to such  
20 things as waste and BRC and things like that. What  
21 do you think the prospects are of getting satisfactory  
22 legislation through the Congress once you get it up  
23 there? I guess what I'm really saying is how  
24 realistic do you think it is that we're going to do  
25 this any other way than through the courts?

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1 DOCTOR BARTLETT: Hard to judge at this  
2 point. We haven't, in my mind, tested the waters  
3 enough for me to have an opinion on that. From a  
4 program point of view and the Director's point of  
5 view, in order to get on with the mission it's  
6 essential and we'll give it our best shot. There's  
7 clearly states' rights issues, constitutionality  
8 issues, flow-down of responsibility issues involved  
9 in this thing and I'm sure they'll all come into play.  
10 In fact, we take the viewpoint, I take the viewpoint  
11 that as I said in the credo, our principal program  
12 responsibility is an environmental protection  
13 responsibility.

14 Now, how well you can get that angle  
15 across as a basis for any trade-offs between national  
16 mission and environmental responsibility and states'  
17 rights is going to be a really interesting question.  
18 It will depend, I think, on the attitudes of the  
19 individual members of Congress and the Senate.

20 But I think we must prosecute the issue  
21 and the need as effectively as we can. That's all I  
22 can say at this point, and we will. We're fully  
23 aware, I hope, that these are muddy waters.

24 CHAIRMAN CARR: At least.

25 DOCTOR BARTLETT: At least.

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1                   CHAIRMAN CARR:    I have to ask this  
2 question because last year Mr. Duffy kind of  
3 questioned our decision on how much grater than Class  
4 C is out there and said it was going to have a big  
5 impact on the size of the repository. So, he promised  
6 to get me some data on how much greater than Class C  
7 is out there. How are we doing on finding out that  
8 number?

9                   DOCTOR BARTLETT: We're still working on  
10 it. I'm going to waffle on you, because it does  
11 depend on an awful lot of things.

12                  CHAIRMAN CARR:    I give my predecessor a  
13 lot of problems too.

14                  DOCTOR BARTLETT: It depends on how it's  
15 defined. Let me give you one specific example. If  
16 a reactor vessel is taken out of service and it's  
17 become activated, is that a GTCC waste or is it a low-  
18 level waste or what? How does that get handled? If  
19 it's GTCC and it has to go in a repository, that's a  
20 lot of stuff just in one package. If it's not, then  
21 maybe we don't have so much to deal with and you put  
22 it in the nooks and crannies between the spent fuel  
23 and the glass rods. It's still that open issue.

24                  CHAIRMAN CARR:    There are some reactor  
25 vessels sitting in a low-level waste repository now

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1 that are DOE reactor vessels.

2 When do you expect that your contractor  
3 who is going to oversee all your contracts going to  
4 be fully in place? Is he fully in place already?

5 DOCTOR BARTLETT: I'd like to ask Mr.  
6 Peters to address that. He's been working that one.

7 CHAIRMAN CARR: All right.

8 MR. PETERS: Let me first preface the  
9 response, Mr. Chairman, with the fact that Doctor  
10 Bartlett was originally bid as one of the key  
11 personnel on the TRW proposal and he cannot talk about  
12 that per se.

13 We're in the final stages of negotiation  
14 at this point. They are not on board. We've gotten  
15 through most of the normal procurement kinds of hoops  
16 and prognosis at this point would lead me to believe  
17 that we could probably have an award either further  
18 into December or early January.

19 CHAIRMAN CARR: I guess my curiosity was  
20 originally, I think, the idea behind that was great  
21 because you had three sites you were looking at and  
22 there were going to be a lot of contractors involved.  
23 Now you're down to one site and so I wondered if you  
24 feel the necessity is still there to have this.

25 MR. PETERS: Absolutely. In our view,

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1       there's really no significant alternative that  
2       presents any better option for us. I think in large  
3       measure we would look to the M&O contractor to  
4       implement the management systems improvement strategy  
5       that's being developed in the program that Doctor  
6       Bartlett talked about.

7               Additionally, we would be focusing on  
8       that, having that contractor focus in large measure  
9       on integrating the technical activity at the Yucca  
10      Mountain site. There are a lot of things that have  
11      to be tied together from a technical direction  
12      perspective and we would look to that organization to  
13      assist us in doing so.

14             CHAIRMAN CARR: Okay. And you mentioned  
15      alternatives to high-level waste disposal that we're  
16      looking at and the Department of Energy, I guess, had  
17      mentioned a lot about actinide burn-up. We still, I  
18      guess, are not signatories to the ocean dumping idea  
19      that it's prohibited. How much effort are you putting  
20      on alternative looks these days?

21             DOCTOR BARTLETT: I would say the effort  
22      is essentially one of monitoring. We are putting no  
23      direct effort into it. It doesn't fall within our  
24      charter, if you will, at present.

25             CHAIRMAN CARR: That's not what the law

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1 says.

2 DOCTOR BARTLETT: That's right. So, in  
3 compliance with the law, we're focusing on our mission  
4 and monitoring some of these things that might, in the  
5 long haul, provide strategic alternatives. But we are  
6 not actively involved in investigating or evaluating  
7 any of them.

8 CHAIRMAN CARR: Okay. And one final  
9 question. I noticed your budget keeps dropping  
10 continuously. Are you adequately funded to get your  
11 mission accomplished?

12 DOCTOR BARTLETT: No. Within the hour,  
13 perhaps, we'll learn what OMB did to us and to you,  
14 I presume, with respect to the next fiscal year. What  
15 we are doing strategically --, what you're referring  
16 to of course is we had a budget assigned by OMB last  
17 year, about \$293 million. The pass-back, the mark for  
18 this year is \$243 after it got out of conference.

19 What we are doing is sustaining the  
20 spending level in our program activities by using  
21 monies which we had in reserve, which had not been  
22 spent in prior years. We have established in our  
23 dialogues with OMB and others that in order to  
24 proceed -- first of all, we actually -- to meet the  
25 Secretary's milestones as they were established a year

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1       ago, the funding is not sufficient, if it stays at  
2       this kind of level, especially, what we've been  
3       seeing.

4               But in order to proceed and to sustain our  
5       activities in the Admiral's strategic schedule, if I  
6       can call it that, we do need more funding and we need  
7       at least to maintain the levels of funding that we  
8       have this year which will be essentially what the  
9       Conyers Committee gave us plus close to \$100 million  
10      of spend-down of prior monies.

11              So, we went into the OMB with a mark of  
12      \$353, \$353 million. We'll find out soon if that's  
13      what comes back. I can tell you this, that if it  
14      comes back significantly less, the fact that we are  
15      sustaining our program this year by spending now in  
16      our reserves means that we cannot do that in the  
17      future and our progress would be impacted.

18              CHAIRMAN CARR: Well, I realize it costs  
19      a lot of money just to stand still with the operation  
20      ready to run and not being able to get on the site.  
21      But is the delta mainly based on what you need to get  
22      on the site and start working?

23              DOCTOR BARTLETT: No, it's not really.  
24      A feature that tends to get lost by those who aren't  
25      familiar with the intricacy and details of our program

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1 activities is that we currently have a lot of data  
2 acquisition activity already ongoing, from a very  
3 large number of bore holes where there's piezometers  
4 and we have a seismic network, et cetera, and there's  
5 analysis and acquisition of data which is essentially  
6 a baseline that exists right now. Getting back on the  
7 mountain is an increment of activity and in terms of  
8 dollar cost it's relatively small.

9 The activities that we anticipate at  
10 Midway Valley and Trench 14 have an incremental cost  
11 on the order of \$10 million. It's peanuts compared  
12 to everything else that we have right now. But it's  
13 significant in terms of indication of progress.

14 CHAIRMAN CARR: Well, I share that. When  
15 you slow down, we are expected to slow down too and  
16 in my opinion much of our monies need to be spent so  
17 that we can stay ahead. When you do catch up, we  
18 don't want to be left behind. So, if you will drag  
19 us along with you or --

20 DOCTOR BARTLETT: Be glad to.

21 CHAIRMAN CARR: -- we'll try to help you  
22 out, we'll do that.

23 Are there any other questions?

24 COMMISSIONER REMICK: Just a follow-on  
25 questions.

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1           Mr. Peters, in the contractor management  
2 area, dealing with one site, do you have any idea how  
3 many individual contractors you will eventually have  
4 involved?

5           MR. PETERS:     At the present time we  
6 anticipate that we'll be able to reduce the number of  
7 direct contracting activity with national laboratories  
8 from the total of eight that we have now to  
9 approximately three or four.

10           In terms of the other contractors on  
11 board, and incidentally we have since the time that  
12 the program was looking at three sites as well as the  
13 second repository, at that time we had about 200  
14 contractors on board. We're down now on the order of  
15 about 50 or so. We anticipate reducing that number  
16 of contractors down again to potentially 25 to 30.  
17 Primary focus on integration and consolidation of  
18 activity, eliminating some potential duplication and  
19 overlaps that currently exist, but at the same time  
20 retaining the necessary capabilities that we do have  
21 in the system.

22           COMMISSIONER REMICK:   Thank you.

23           CHAIRMAN CARR:   Any other questions?

24           Well, gentlemen, I would like to thank you  
25 for meeting with us today to discuss the status of the

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1 Civilian High-Level Waste Program.

2 Doctor Bartlett, I agree with your  
3 analysis which you presented before Congress in  
4 October that successful management of the High-Level  
5 Waste Program is one of the linchpins of a viable  
6 nuclear option.

7 As an outgrowth of Secretary Watkins'  
8 initiatives, I am pleased to see this new management  
9 approach based on systems engineering which should  
10 allow you to recognize and address uncertainties as  
11 they arise in the siting and construction of this  
12 first of a kind disposal facility.

13 As you gain experience with this approach,  
14 please advise us as early as possible of any resulting  
15 adjustments in the program and any impacts it may have  
16 on your interactions with the NRC.

17 As we urged in NRC's comments to DOE on  
18 the site characterization plan, we believe that early  
19 priorities should be given to addressing those issues  
20 which may most significantly impact a site suitability  
21 determination. We are pleased to see a continuing  
22 commitment to develop the tools and procedures needed  
23 to conduct scientific investigations at Yucca  
24 Mountain. In this regard, we urge continued emphasis  
25 on the development and implementation of performance

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1 assessment capabilities.

2 We are encouraged by our staff's report  
3 of progress in the area of quality assurance. DOE  
4 should continue to devote effort in this area to  
5 ensure that satisfactory implementation of quality  
6 assurance programs will permit timely initiation of  
7 site characterization activities when permits become  
8 available.

9 In my view, these annual meetings are most  
10 valuable in promoting an exchange of views and I  
11 encourage you to continue frequent interaction with  
12 the NRC staff to ensure early identification and  
13 potential resolution of issues as they arise.

14 Do any of my fellow Commissioners have  
15 additional comments?

16 If not, we stand adjourned. Thank you  
17 very much.

18 (Whereupon, at 11:41 p.m., the above-  
19 entitled matter was concluded.)  
20  
21  
22  
23  
24  
25

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TITLE OF MEETING: BRIEFING BY DOE ON STATUS OF CIVILIAN HIGH-LEVEL WASTE

PLACE OF MEETING: ROCKVILLE, MARYLAND

DATE OF MEETING: DECEMBER 18, 1990

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# Office of Civilian Radioactive Waste Management

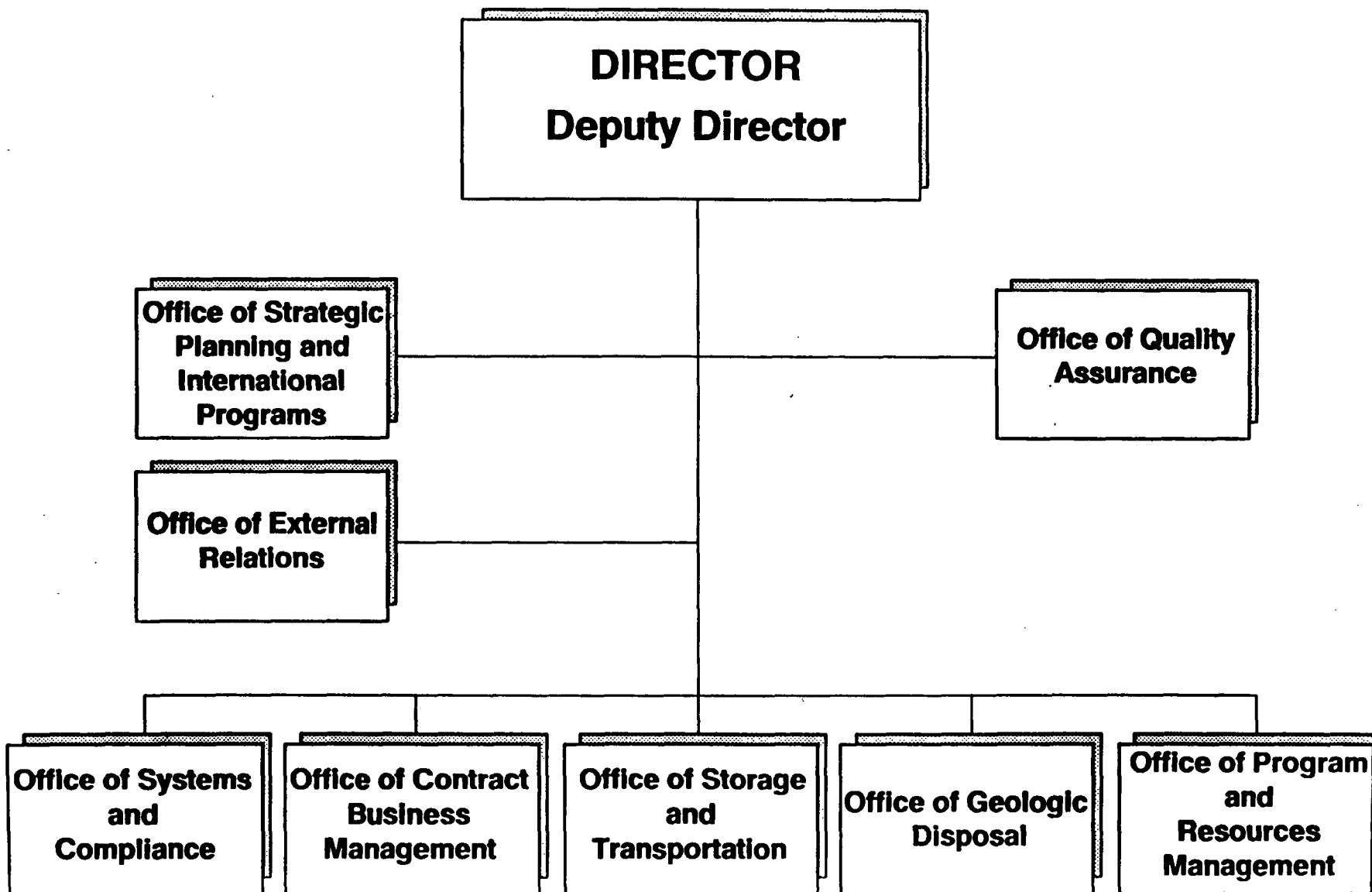


Figure 1



# MSIS: The Framework for System/Programmatic Functions

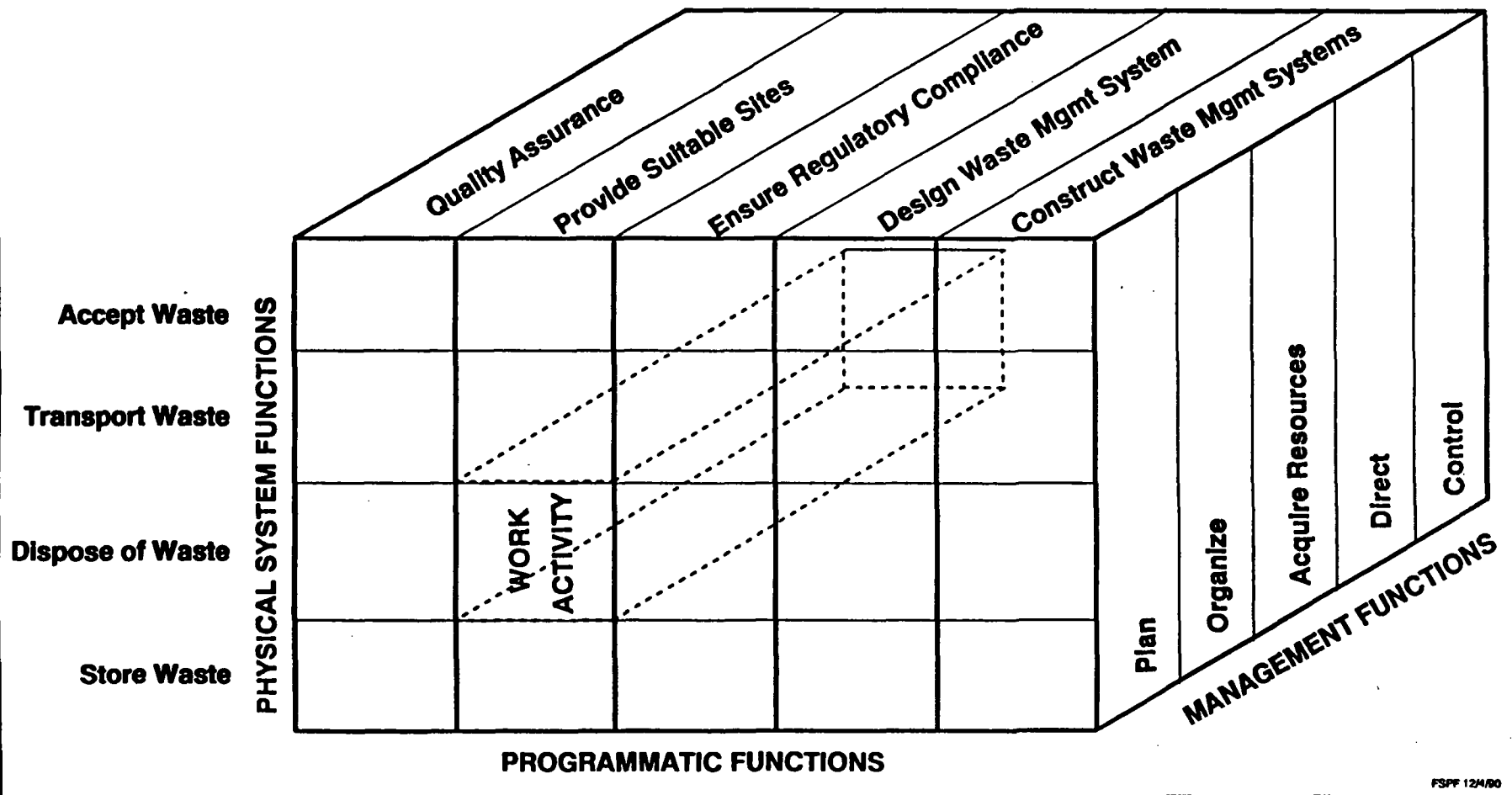


Figure 2

# Phased MSIS Implementation

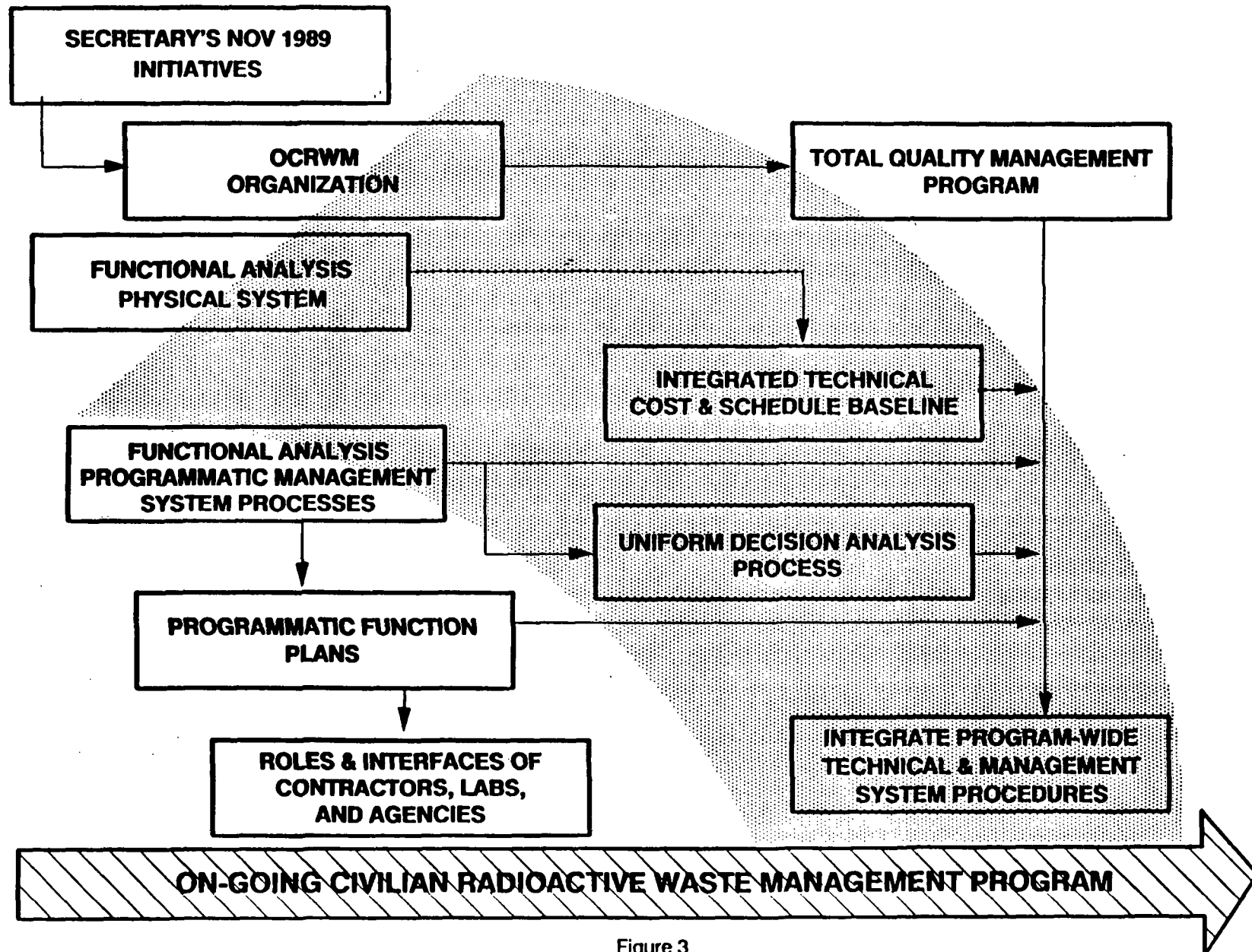


Figure 3

# Key Scientific/Engineering Activities - FY 1991

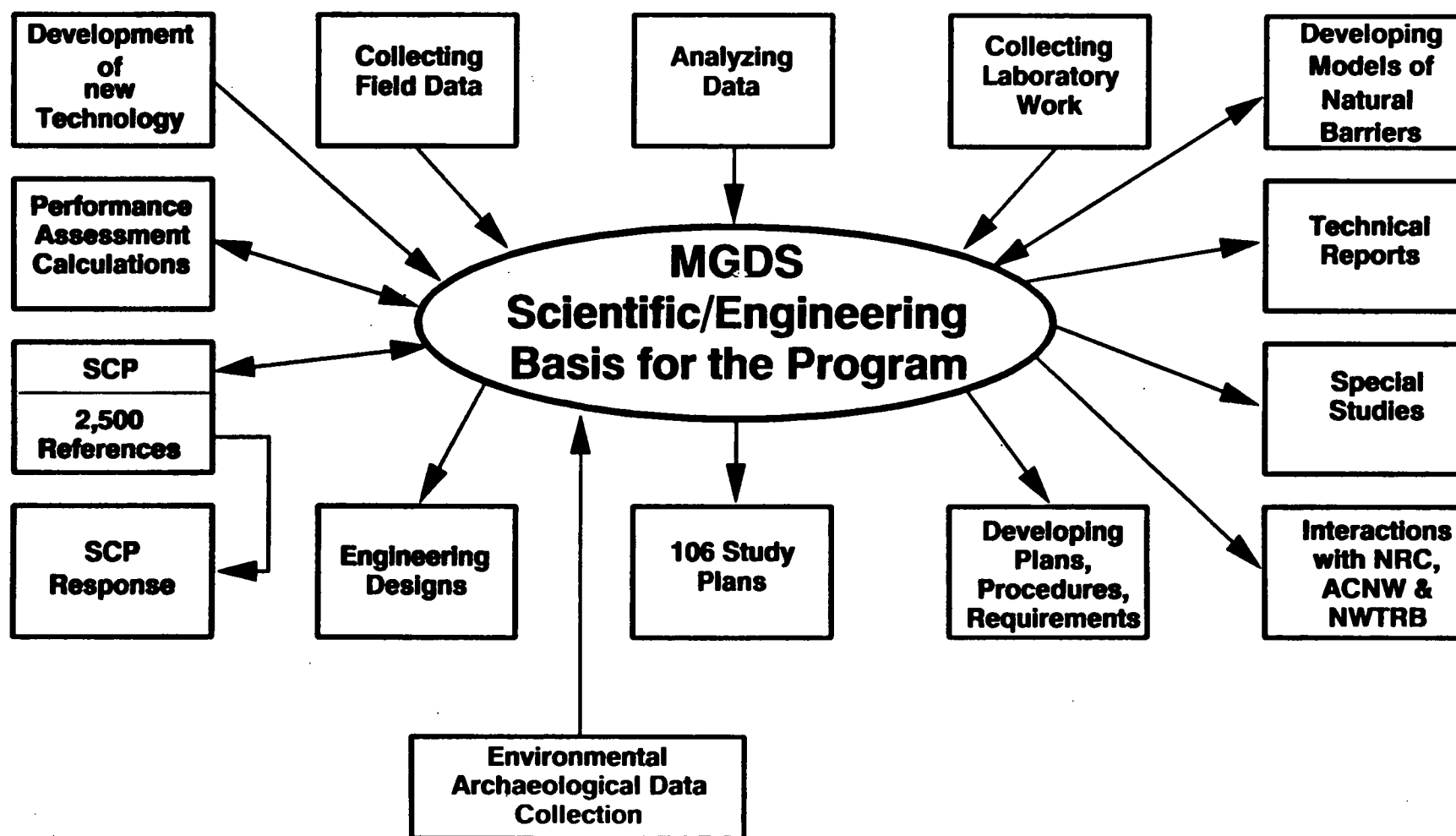


Figure 4

# Key MRS Activities - FY 1991

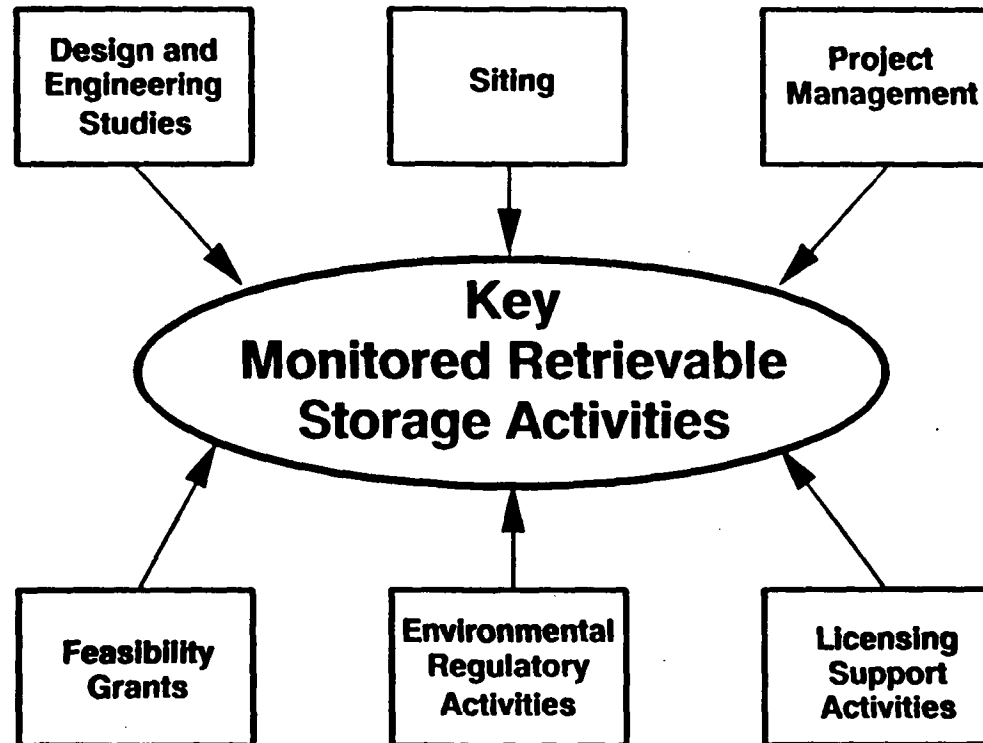


Figure 5

# Key Transportation Activities - FY 1991

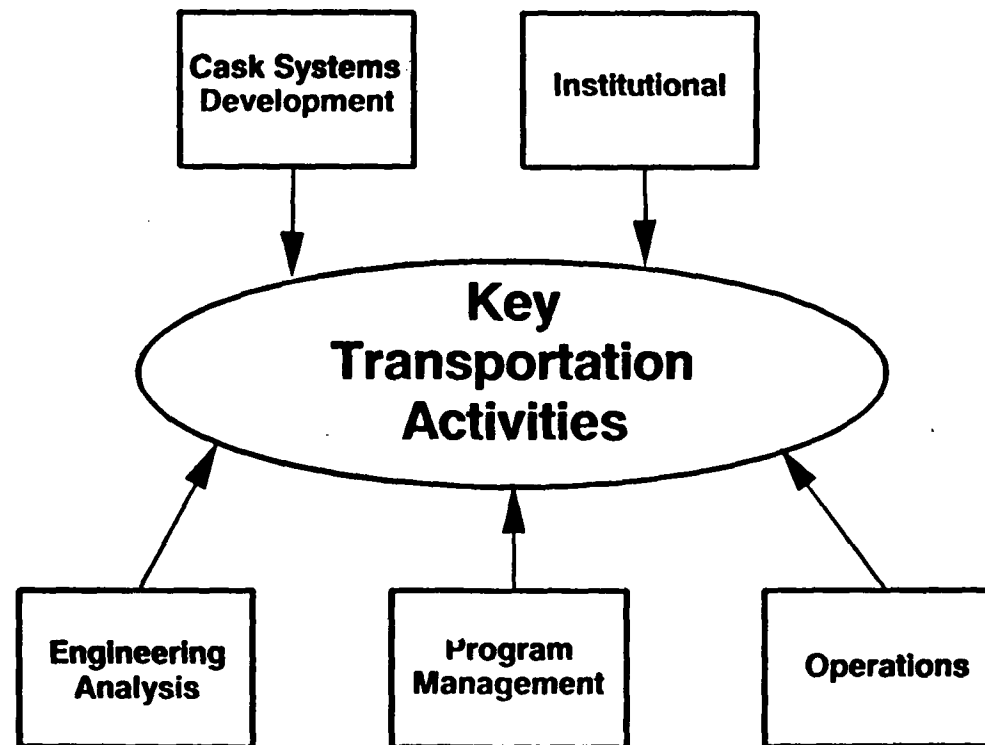


Figure 6

***PRESENTATION TO THE  
U.S. NUCLEAR REGULATORY COMMISSION  
STATUS OF THE CIVILIAN RADIOACTIVE WASTE  
MANAGEMENT PROGRAM***



***John W. Bartlett, Director  
Office of Civilian Radioactive Waste Management  
U.S. Department of Energy  
December 18, 1990***

## ***PRESENTATION TOPICS***

- ***OCRWM CREDO***
- ***KEY 1990 ACTIONS, INITIATIVES, AND EVENTS***
- ***PLANS AND EXPECTATIONS***

# ***OCRWM CREDO***

- ***WE ARE THE OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT***
- ***WE HAVE RESPONSIBILITY AS A STEWARD OF THE ENVIRONMENT TO PROVIDE A TIMELY SOLUTION FOR THE MANAGEMENT AND ULTIMATE DISPOSAL OF THE NATION'S HIGH-LEVEL RADIOACTIVE WASTE***
- ***WE HAVE RESPONSIBILITY TO PROTECT THE HEALTH AND SAFETY OF THE PUBLIC WHILE EXECUTING OUR DUTIES***



## ***OCRWM CREDO (Cont'd)***

- ***WE CONDUCT OUR ACTIVITIES AND OURSELVES ACCORDING TO THE HIGHEST STANDARDS OF INTEGRITY, OPENNESS, TECHNICAL EXPERTISE, AND PROFESSIONAL EXCELLENCE.***
- ***WE MEASURE OUR SUCCESS BY OUR CONTRIBUTION TO THE PROTECTION AND ENHANCEMENT OF THE ENVIRONMENT IN WHICH WE LIVE***

## ***OCRWM CREDO (Cont'd)***

- ***BY SUCCESSFULLY IMPLEMENTING OUR MISSION, WE WILL ASSURE THE RISK OF HIGH-LEVEL RADIOACTIVE WASTE TO FUTURE GENERATIONS IS AS ACCEPTABLE AS THE RISK TO OUR OWN***
- ***WE ARE RESPONSIVE NOT ONLY TO OUR OBLIGATIONS AS A FEDERAL AGENCY, BUT ALSO TO CITIZENS' CONCERNS AND THE NATIONAL INTEREST***

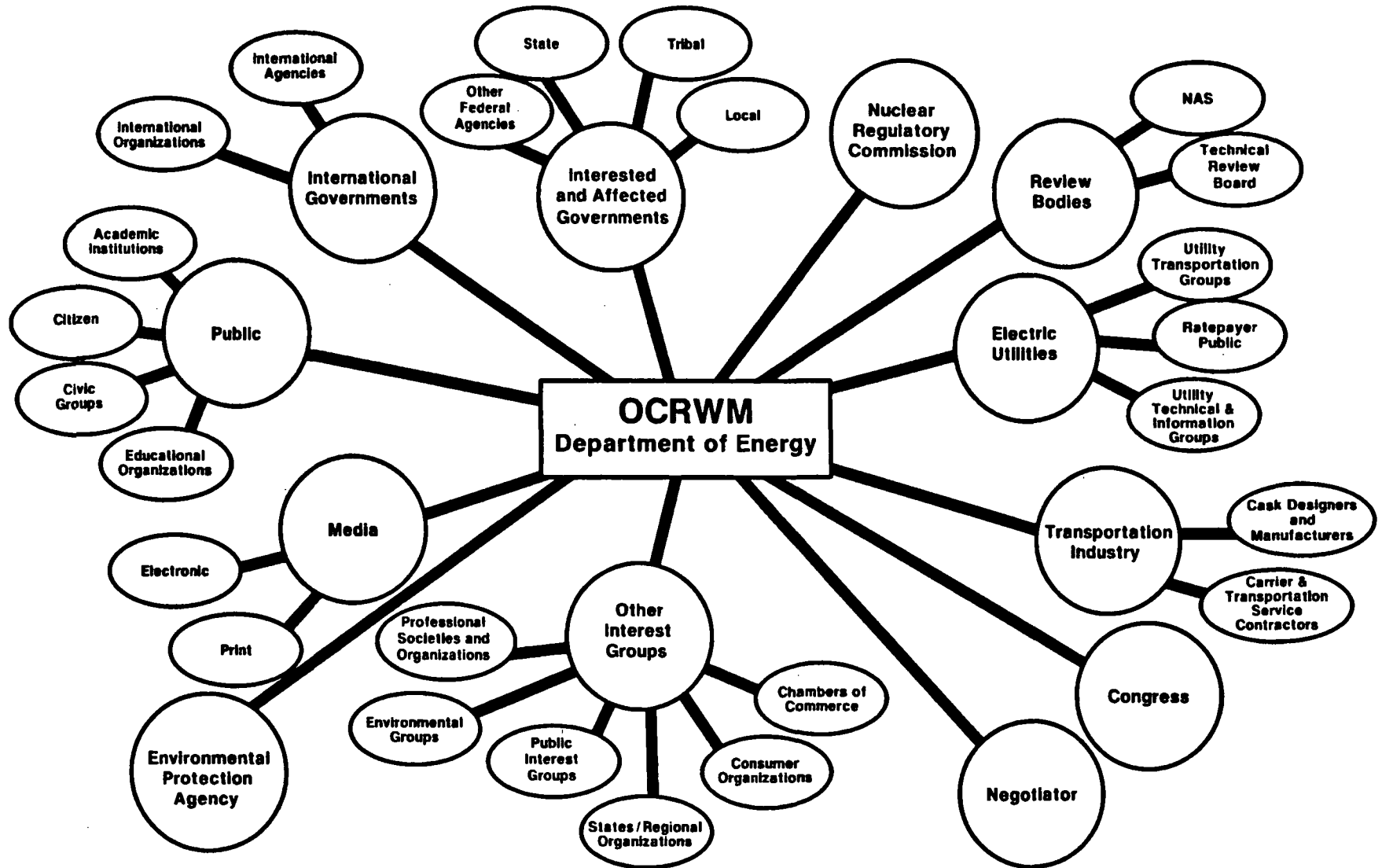
## ***OCRWM CREDO (Cont'd)***

- ***WE EMPLOY TECHNICAL RESOURCES OF THE HIGHEST CALIBER AND INTEGRITY TO MEET OUR OBLIGATIONS***
- ***OUR ABILITY TO MEET OUR OBLIGATIONS TODAY WILL REMOVE A POTENTIAL OBSTACLE TO USE OF NUCLEAR ENERGY IN THE FUTURE***

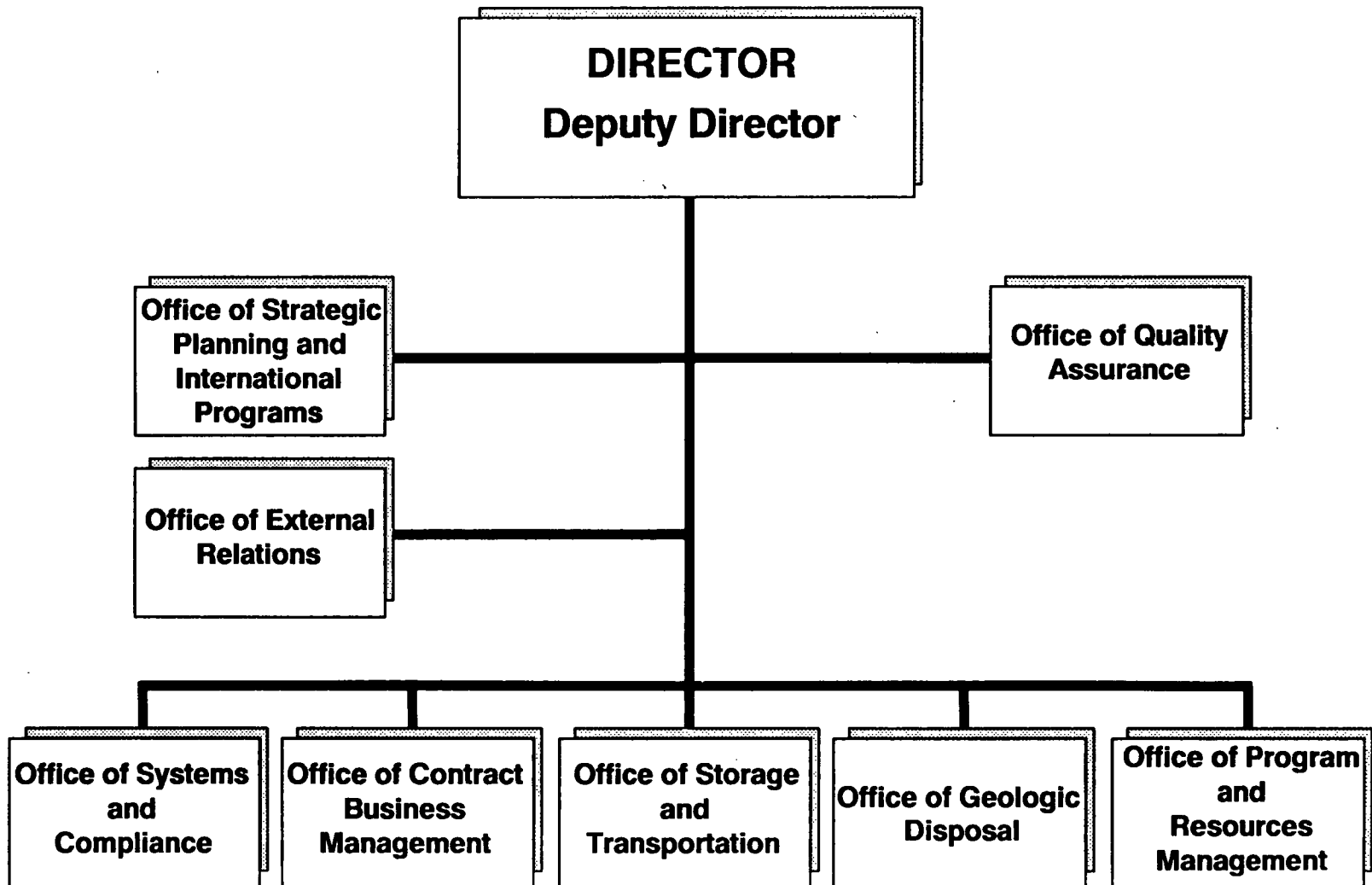
# ***KEY 1990 ACTIONS, INITIATIVES, AND EVENTS***

- ***IMPLEMENTATION OF SECRETARY'S 1989 CHANGE INITIATIVES***
- ***INITIATIVES FOR PROGRAM PROGRESS***
- ***INTERACTIONS WITH EXTERNAL PARTIES***

# INTERACTION WITH INTERESTED PARTIES



# Office of Civilian Radioactive Waste Management



# ***MANAGEMENT IMPROVEMENT HIGHLIGHTS***

- ***MANAGEMENT SYSTEMS IMPROVEMENT STRATEGY (MSIS)***
- ***OCRWM QUALITY ASSURANCE PROGRAM***
- ***ENERGY SYSTEMS ACQUISITION ADVISORY BOARD***
- ***OCRWM COST AND SCHEDULE CONTROL SYSTEMS***
- ***M&O CONTRACTOR***

# ***PROGRAM STRATEGY HIGHLIGHTS***

- ***SPENT FUEL ACCEPTANCE, STORAGE, AND TRANSPORTATION ACTIVITIES***
- ***YUCCA MOUNTAIN CHARACTERIZATION ACTIVITIES***
- ***METHODS FOR EVALUATING SITE SUITABILITY***
- ***STRATEGIC PRINCIPLES***



# ***PROGRAM PROGRESS HIGHLIGHTS***

- ***EXPANSION OF YUCCA MOUNTAIN EVALUATION ACTIVITIES***
- ***COURT AFFIRMED RIGHT TO EVALUATE YUCCA MOUNTAIN SITE***
- ***MOU BETWEEN NEGOTIATOR AND DOE***
- ***EVALUATION OF EXPLORATORY SHAFT FACILITY (ESF) ALTERNATIVES***
- ***PROGRAM-WIDE QA SYSTEM ESTABLISHED***
- ***EXTENSIVE DIALOGUE WITH NRC, NWTRB, NAS, AND OTHERS***

# ***PROGRAM ISSUES HIGHLIGHTS***

- ***NEED FOR LEGISLATION***
- ***IMPROVEMENTS RECOMMENDED BY NAS ALREADY UNDERWAY***
- ***POTENTIAL REVISION OF REGULATORY FRAMEWORK***
- ***INTERACTIONS WITH WIPP***

## ***EXPECTED 1991 HIGHLIGHTS***

- ***INITIATE MRS CONCEPTUAL DESIGN***
- ***EXPAND SITE EVALUATION ACTIVITIES***
- ***SELECT ESF DESIGN***
- ***SELECT STRATEGIC PRINCIPLES***
- ***EXTERNAL REVIEW OF SITE SUITABILITY  
EVALUATION***
- ***ISSUE MISSION PLAN AMENDMENT***

STATEMENT FOR THE RECORD

PRESENTATION TO THE  
U.S. NUCLEAR REGULATORY COMMISSION

STATUS OF THE CIVILIAN RADIOACTIVE WASTE MANAGEMENT PROGRAM

BY

JOHN W. BARTLETT, DIRECTOR  
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT  
U.S. DEPARTMENT OF ENERGY

DECEMBER 18, 1990

This is my first opportunity as Director of the Office of Civilian Radioactive Waste Management to brief the Nuclear Regulatory Commission (NRC) on the status of the Civilian Radioactive Waste Management Program. I am privileged and pleased to do so.

In the Department's presentation a year ago, Leo Duffy reported to you on the Secretary's review of our program and the actions to be taken to implement the initiatives announced in his November 1989 Report to Congress, on the progress the DOE has made, and on matters of interest to the Commission and the Department. The DOE has acted on the initiatives and has made a great deal of progress. The briefing today is on those actions and that progress with particular emphasis on the significant program management initiatives undertaken, OCRWM's mission and the Department's efforts to carry it out, productive interactions with the Commission in the past year, the OCRWM quality assurance program, and plans for FY 1991.

OCRWM PROGRAM MANAGEMENT INITIATIVES

The specific initiatives undertaken are consistent with the Secretary's direction and are the result of an assessment of the management and organizational structure of the Office of Civilian Radioactive Waste Management (OCRWM). They include the reorganization of OCRWM, the development and implementation of a Management System Improvement Strategy (MSIS), the introduction of a number of new management controls, and the acceleration of the Department's efforts to add to the program the considerable resources a Management and Operations (M&O) contractor would provide.

REORGANIZATION OF OCRWM

The reorganization is the direct result of an in-depth review of the program's goals, objectives, responsibilities, organization, and resources. This review indicated the need for clear lines of responsibility, authority, and accountability for OCRWM and its contractors. These were characteristics that the previous matrix structure did not possess. OCRWM's new organization, approved on October 11 and implemented on November 5, 1990, is illustrated in

Figure 1. In this organization, the Office of Geologic Disposal reports directly to the Director; previously, the Yucca Mountain Project Office reported to the DOE Nevada Operations Office. The organization now includes an Office of Storage and Transportation that is responsible for the development of the Monitored Retrievable Storage (MRS) and Transportation Systems that are an integral part of the overall waste-management system. The new Office of Contract Business Management was established to manage the efforts of the M&O contractor and to coordinate other contract management activities, a major undertaking. The Office of Systems and Compliance is responsible for systems engineering, program integration, and regulatory compliance, and acts as the primary contact with the NRC staff. In recognition of the need for more focused attention, the new organization includes separate offices responsible for Strategic Planning and International Programs and for External Relations. The Office of Quality Assurance has the independence and authority required of an organization performing this important function. The Office of Program and Resources Management continues essentially as before. This OCRWM organization is considerably improved and the Department looks forward to the progress it will make.

#### MANAGEMENT SYSTEM IMPROVEMENT STRATEGY (MSIS)

The Management System Improvement Strategy the Department developed and is now implementing is the outgrowth of the Secretary's November 1989 initiative to establish an improved management structure and procedures.

The MSIS involves a fundamentally new approach to the program that is based on systems engineering and analysis of both the waste management system and the organization responsible for its development. The reorganization was designed and implemented with this in mind. This approach takes into account the basic characteristics of the program - its uniqueness, complexity, dynamics, and its requirements for the demonstration of long-term system performance and for licensing by NRC.

As illustrated in Figure 2, the MSIS provides the framework that relates the physical functions the waste management system must perform to the programmatic functions that have to be performed by the organizations involved when carrying out management responsibilities. In the process, the MSIS recognizes and accounts for the relative importance and interaction of the program's unique institutional and public elements with the technical elements on which the Department traditionally tends to focus so much attention. It therefore ensures the proper attention to all aspects of the program without which the Department cannot hope to succeed.

The MSIS is being implemented in phases as illustrated in Figure 3. This effort, which is being carried out "off-line" thereby permitting on-going program activities to proceed, includes the identification of all relevant regulatory requirements with which the system must comply, the reconciliation of those requirements that conflict, the clarification of uncertainties, the incorporation of new and revised requirements as they are identified, and uniform participation by all program participants. The Department is currently involved in the functional analysis of waste management physical system and programmatic functions, the review of program

requirements, and the development of an OCRWM uniform decision analysis process. The MSIS is being implemented in increments consistent with progress in the development of individual system elements. This major effort is expected to be complete in FY 1992.

#### NEW MANAGEMENT CONTROLS

To reinforce the Department's efforts to achieve the objectives of reorganization and MSIS, a number of new management controls are being developed and introduced. These are being designed to improve the effectiveness of operations, increase accountability, and ensure success in implementing strategies. The Secretary has appointed an Energy Systems Acquisition Advisory Board to control project top-level schedules for this major DOE program. In addition, a new requirement has been introduced for independent review of the cost baseline prior to the initiation of the advanced conceptual design and license design of the Mined Geologic Disposal System (MGDS) facility.

#### THE M&O CONTRACT

As you are well aware, the Congress and the utility industry have, in the past, expressed their concern about the program's need for contractors with a record of successfully completed projects, about duplicative contractor support, and about the lack of integrated contractor efforts that have been characteristic of the program. OCRWM shares these concerns and believes that an M&O contractor would consolidate and provide the direction and integration of program resources required to permit beginning work on new program priorities. The Department has, therefore, been negotiating an M&O contract with TRW Environmental Safety Systems, Inc.. The initial focus of the M&O's efforts will be to support the implementation of the OCRWM Program as defined in the Secretary's November 1989 Report to Congress and the implementation of MSIS initiatives.

#### THE OCRWM MISSION

OCRWM's mission is to dispose of this nation's spent fuel and high-level radioactive waste in a manner that protects the health and safety of the public and the quality of the environment. This is the Department's mission as defined by the Congress and as it is perceived by the public at large. The Department will proceed with resolve and efficiency to fulfill this mission. To do so will require access to the Yucca Mountain candidate site for the new work that must be carried out; the evaluation of the suitability of that site; waste acceptance for an interim period in an MRS; and a transportation system for shipping waste from reactor sites to the MRS and eventually to the geologic repository. A draft Mission Plan Amendment describing the program's significant changes and the Department's future plans will be prepared and issued for comment to the NRC, other interested parties, and the general public.

## ACCESS TO THE YUCCA MOUNTAIN SITE

Gaining access to the Yucca Mountain site is the prerequisite to evaluation of its suitability. Access is blocked by a legal impasse that is very complex.

In 1989, the Nevada legislature declared that storage of high-level radioactive waste is unlawful in the State of Nevada. The Nevada attorney general subsequently issued an opinion that DOE's applications for the environmental permits required for site characterization were therefore moot. As a consequence, Nevada refused to process the permits and, in January 1990, filed suit in the U.S. Court of Appeals for the Ninth Circuit challenging the Secretary's failure to terminate site characterization activities and to find that the site is technically disqualified. DOE then requested injunctive relief in the U.S. District Court for the District of Nevada, requiring that the State process its permit applications, a request that was stayed pending the outcome of the proceedings in the Circuit Court. In September 1990, the Circuit Court unanimously ruled that the Secretary's decision to continue site characterization is not contrary to law. DOE's subsequent request for summary judgement is still pending before the District Court.

Given the State's position, pursuing legal and administrative remedies could take as much as two years for the permits now sought; the Department will need 10 to 15 State permits for site characterization. Therefore, additional litigation and delay seem likely. As a consequence, on October 11, 1990, Secretary Watkins wrote to Sen. J. Bennett Johnston, Chairman, Committee on Energy and Natural Resources, and to other members of Congress, expressing his concerns. In his letter, he stated, in part:

"...Under these circumstances, I strongly believe that legislative action to gain access to Yucca Mountain and to sustain our site characterization activities without future permitting obstructions is necessary..."

He did not suggest the kind of legislative action that should be taken.

DOE is not seeking exemption from environmental requirements. The Department emphasizes that the Secretary also stated in his letter:

"...we do not in any way seek exemption from environmental protection requirements. We seek only assurance of opportunity to proceed as expeditiously as possible with our mandated responsibilities for evaluation of the Yucca Mountain site."

The Department awaits the actions of the courts and the Congress with considerable interest and is fully ready to proceed with evaluation of the site once the needed permits are obtained.

## SITE SUITABILITY EVALUATION

DOE has, on a number of occasions, announced decisions to conduct early evaluations to determine if conditions or features exist at the Yucca Mountain site that would make it unsuitable for development as a repository. This decision is consistent with suggestions previously made by the Commission, the State of Nevada, the Nuclear Waste Technical Review Board, electric utilities, and others, and with the Secretary's commitment in his November 1989 Report to Congress.

The Yucca Mountain site continues to be controversial. The Department intends to do everything possible to ensure that the American people as a whole and the people of the State of Nevada in particular can be confident that the evaluation process used and the determinations made are sound. Evaluations will focus on the characteristics, features, and conditions of the natural barriers, and definitive identification of potential disqualifying conditions at the site as early as possible. They will be conservative and will not use the favorable performance of the engineered barrier system to compensate for deficiencies, to mask weaknesses, or to obscure the performance of the natural barriers. If the site is found unsuitable, DOE will terminate activity and report to Congress in accordance with the requirements of the law.

The Department hopes that independent, external review of the evaluation process being developed - the methods and criteria to be employed, the priorities for the tests that will be carried out, and the analyses and evaluations that will be performed - will provide the confidence that is so essential to the Department's credibility. As part of this effort, the Department is considering alternative methodologies being developed by the DOE itself, by Golder Associates, and by the Electric Power Research Institute. These methodologies are based on the general requirements of 10 CFR Part 960. The independent review, under the auspices of an organization such as the National Academy of Sciences, will provide input to the DOE during the Department's selection of the evaluation process to be employed.

Initial investigations will concentrate on those site features and conditions that can be investigated through surface based testing. They may provide early evidence of the existence of disqualifying conditions. The Department believes, however, that underground tests in an exploratory shaft facility constructed at the depth of the proposed repository will also be required for a comprehensive evaluation of the hydrologic, geochemical, geomechanical, and thermal conditions and features at the site. Presently available information may be suitable for evaluating some site conditions or features, e.g., the potential for dissolution of host rock. However, additional information will have to be obtained for other comprehensive evaluations, e.g., the evaluation of ground water travel time. It is for this reason that an exploratory shaft facility will be required to supplement the surface based tests.

The evaluation process will include a series of analyses performed at appropriate points in time consistent with the availability of information from the testing program. As the Department obtains and evaluates that



information, the Department will use the knowledge gained to adjust the program wherever this is appropriate. In this sense the process will be iterative. The Department fully intends to take advantage of these steps in the process and to use them as a means for keeping affected and interested parties such as the State of Nevada and the Commission informed of and involved in developments.

#### WASTE ACCEPTANCE: THE MRS AND TRANSPORTATION SYSTEM

Waste acceptance at an MRS is an integral part of the Department's strategy. Therefore, the Department is aggressively pursuing the development of the MRS and Transportation System. Support requested by Mr. David Leroy, the newly confirmed independent Nuclear Waste Negotiator, will be provided as he initiates his efforts to identify volunteer sites for an MRS facility and a repository.

The Department evaluated alternative MRS technologies and configurations and will soon complete the functional analysis of MRS facility performance and governing regulatory requirements. In FY 1991, after satisfying appropriate quality assurance requirements, the advanced conceptual design of the MRS facility will be started.

Development of the Transportation System is being carried out on a schedule consistent with the development of the waste management system as a whole. The final design was initiated for from-reactor truck and rail/barge casks by General Atomics and Babcock and Wilcox respectively in January 1990 and their completion is expected by the end of 1991. Also, transportation near-site infrastructure studies were initiated. The Department expects to complete the required transportation studies for a draft MRS environmental impact statement and expects that NRC will issue the certificates of compliance for the casks in 1994. From-reactor casks are expected to be available for service by 1998. The schedule is ambitious, as it should be, and will be carried out.

#### MISSION PLAN AMENDMENT

The first Mission Plan for the Civilian Radioactive Waste Management Program was issued in June 1985 and was amended two years later. In that amendment, Congress was advised of the significant developments that had taken place, a revised schedule for the development of the first repository was presented, and DOE provided its views on the postponement of site-specific work for the second repository. The Nuclear Waste Policy Amendments Act was passed in December 1987 and in June 1988, a draft Mission Plan Amendment that was responsive to its provisions was issued for comment. The program has changed significantly since then as outlined in the Secretary's November 1989 Report to Congress. Given these changes, it is incumbent on the Department to formally advise the Congress of new plans in a Mission Plan Amendment.

This Amendment will include the mission, objectives, policies and strategic principles, and a mission implementation plan. OCRWM's objectives of timely disposal, timely and adequate waste acceptance, schedule confidence, and system flexibility have been described previously.

Department policies and strategic principles will provide the framework for the mission implementation plan. The Department believes that the effective participation of affected and involved parties in the development process is essential to the success of our program. To obtain input, a workshop was conducted in Salt Lake City on December 4-5, 1990, on the strategic principles related to ensuring public safety and protecting the environment. Another workshop will be conducted in Washington, D.C., in January 1991, on those principles related to the stewardship of resources and the effectiveness of operations. Among the issues of strategic importance discussed at these workshops are the extent to which spent fuel should be aged before disposal, the design of waste packages to exceed the minimum regulatory standard, the timing and criteria that should be used for determining the suitability of the candidate site for a repository, and contingency planning for the event that the Yucca Mountain candidate site is found to be unsuitable for use as a repository. The Department is pleased that NRC is supporting this important effort.

#### DOE/NRC INTERACTIONS

DOE interactions with the NRC staff are very important. They include technical exchanges and meetings, monthly management meetings, bi-monthly quality assurance meetings, the quarterly meetings for scheduling future interactions, and meetings with the Advisory Committee on Nuclear Waste and the Center for Nuclear Waste Regulatory Analysis. These interactions are essential vehicles for exchanging technical information, providing feedback, and sharing concerns and priorities.

In 1990, technical exchanges increased shared understanding of the Yucca Mountain site. These interactions involved seismic hazards, the investigation of exploratory shaft facility alternatives, performance assessment, radionuclide adsorption, the hydrology and geochemistry of the unsaturated zone, the significance of the calcite-silica deposits at the site, and the Calico Hills risk-benefit analysis.

The interactions also included NRC's peer review workshop on the substantially complete containment feasibility study, NRC's Phase I performance assessment report, and most recently, the Department's internal quality assurance audit of OCRWM headquarters and the Yucca Mountain Project Office on October 15-19 and October 22-26, 1990. As a part of this information exchange, the Department provided comments to the staff on Staff Positions and Draft Technical Positions. The results are encouraging and the efforts to provide information and feedback will continue.

In addition to these direct interactions, there has been an extensive dialog with the Nuclear Waste Technical Review Board, the National Academy of Sciences, and others. These supporting interactions help to strengthen DOE's work with the NRC. The Board's recently issued "Second Report to the U. S. Congress and the U. S. Secretary of Energy" is currently being reviewed. The Department is pleased that DOE efforts to address issues and concerns raised by the Board are recognized in the report. In July the Academy's National Research Council Board on Radioactive Waste Management issued its position statement, "Rethinking High-Level Radioactive Waste Disposal." The report

included a number of recommendations. Many of these recommendations had already been adopted and many of the Department initiatives to restructure the program are in complete accord with the Board's findings and recommendations.

The Department will do everything possible to ensure that the interactions in 1991 continue to be productive.

#### OCRWM QUALITY ASSURANCE PROGRAM

In 1990, considerable progress was made to gain acceptance of the quality assurance programs for those organizations participating in site characterization and ESF design for the OCRWM Program. The OCRWM quality assurance program has been approved by DOE and submitted to NRC for acceptance so that OCRWM can initiate Midway Valley Trenching and Calcite Silica investigation site activities. The NRC has accepted two of the participant quality assurance programs and conditionally accepted five others. The quality assurance programs for the two remaining participants are in the DOE review process.

As a result of the reorganization, efforts were initiated to consolidate procedures. Those efforts at the Yucca Mountain Site Characterization Project Office and at headquarters will continue throughout 1991.

In August and in October quality assurance workshops were conducted with participating organizations to provide the opportunity to articulate concerns about conducting scientific investigations in the context of a formal quality assurance program and to begin the task of addressing those concerns, improving understanding, and carrying out the important work that has to be done. Those workshops, in which NRC participated, were very productive and efforts will continue to address the concerns and improve understanding.

The Department conducted an internal audit of OCRWM headquarters and the Yucca Mountain Site Characterization Project Office in October. The audit team identified the need for corrective action prior to initiating new site characterization in a number of areas. The Department is, nevertheless, pleased with the progress and with the findings as reported in the NRC staff's Weekly Information Report - Week Ending November 2, 1990. In that report, the staff recognized the Department's needs, but reported that:

"...Although a number of areas are indeterminate, no findings were identified that would preclude DOE from accomplishing the work required to start site characterization activities in specific, limited areas in January 1991."

The Department will continue to implement a Quality Assurance Program in accordance with NRC requirements.

## OCRWM ACTIVITIES - FY 1991

In FY 1991, efforts will continue to fulfill the mission by undertaking key disposal, storage, and transportation activities illustrated in Figures 4, 5, and 6.

The tools, equipment, processes and procedures needed to conduct scientific investigations at Yucca Mountain and the analysis of data acquired from these investigations will continue to be developed. More specifically, the Department will continue to collect and analyze data from laboratory activities and from ongoing field activities, to develop models of natural barriers, to develop performance assessment capabilities, and to proceed with engineering designs. In addition, the Department will continue to establish priorities for the plans for these activities and to focus near-term efforts on those investigations that are concerned with the identification of any potentially unsuitable conditions at Yucca Mountain. The ongoing efforts to revise the remanded EPA standard, 40 CFR Part 191, are directly relevant to these activities. DOE will continue to review and comment on working drafts and to encourage the NRC to work with the EPA to develop an appropriate standard.

As indicated previously, key efforts to support the development of the MRS facility will continue. For example, efforts will focus on design and engineering studies, including the initiation and completion of the conceptual design; environmental, regulatory and licensing activities; and feasibility grants to States, Indian Tribes and local entities, as authorized in the Amendments Act.

In addition, key activities supporting the development of the transportation system, including the development of cask systems, transportation support systems, and institutional interactions will continue.

The Department will provide support requested by Mr. David Leroy, the Nuclear Waste Negotiator, for his important endeavors. Such support will be given top priority.

Work will continue to broaden ongoing interactions with external groups such as the Nuclear Waste Technical Review Board, the National Academy of Sciences, and the Secretary's Energy Advisory Board. Their use as sounding boards and as independent expert review and assessment of the Department's technical program will be broadened. Finally, building on current efforts to increase the involvement of external parties in predecisional planning, the avenues, frequency, and substance of our dialogue with affected and interested parties will be expanded. The efforts already initiated to involve external parties in the development of the methodology for evaluating the suitability of the Yucca Mountain site and in the development of strategic principles illustrate what the Department will continue to do.

# Office of Civilian Radioactive Waste Management

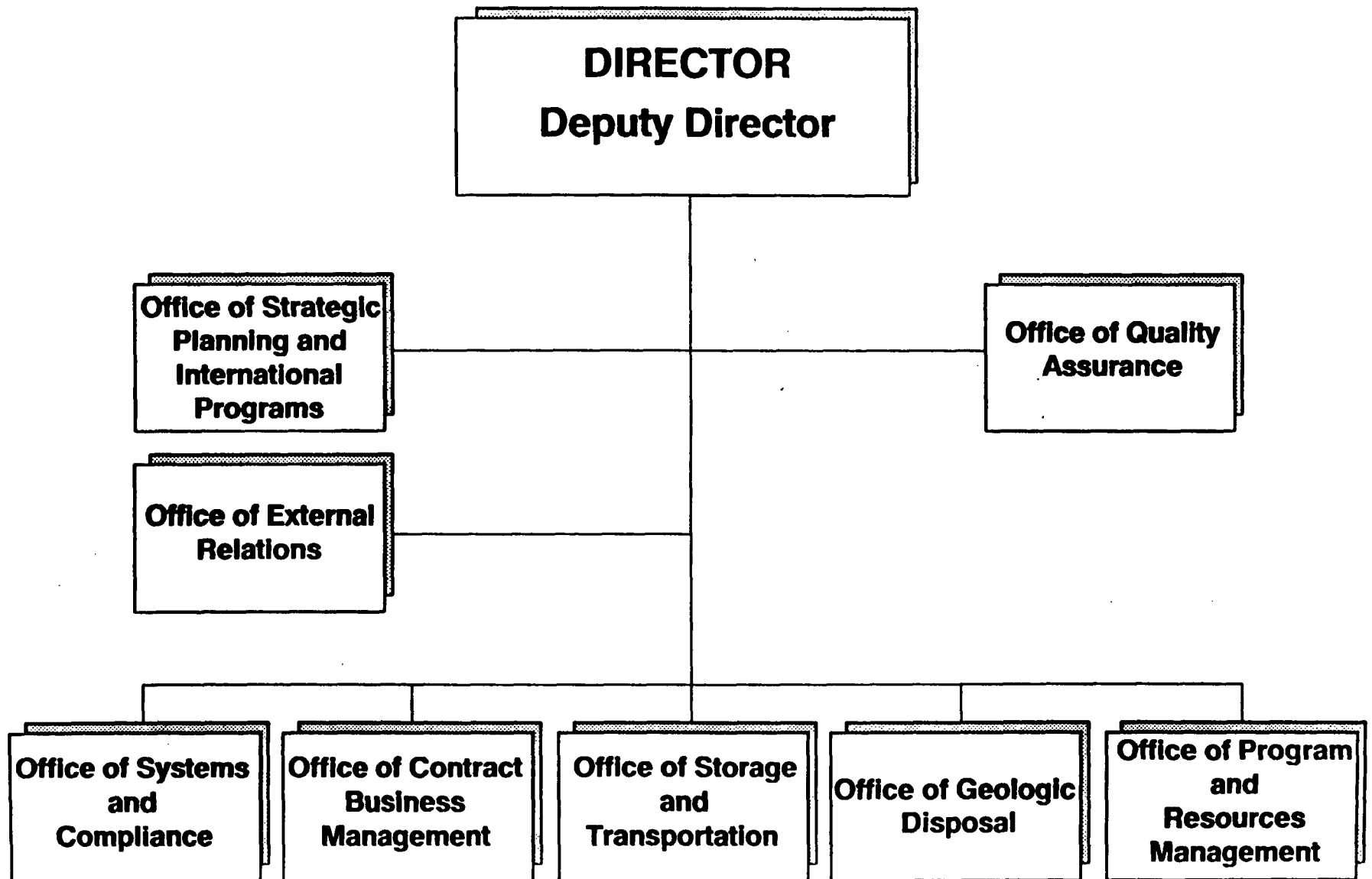


Figure 1

# MSIS: The Framework for System/Programmatic Functions

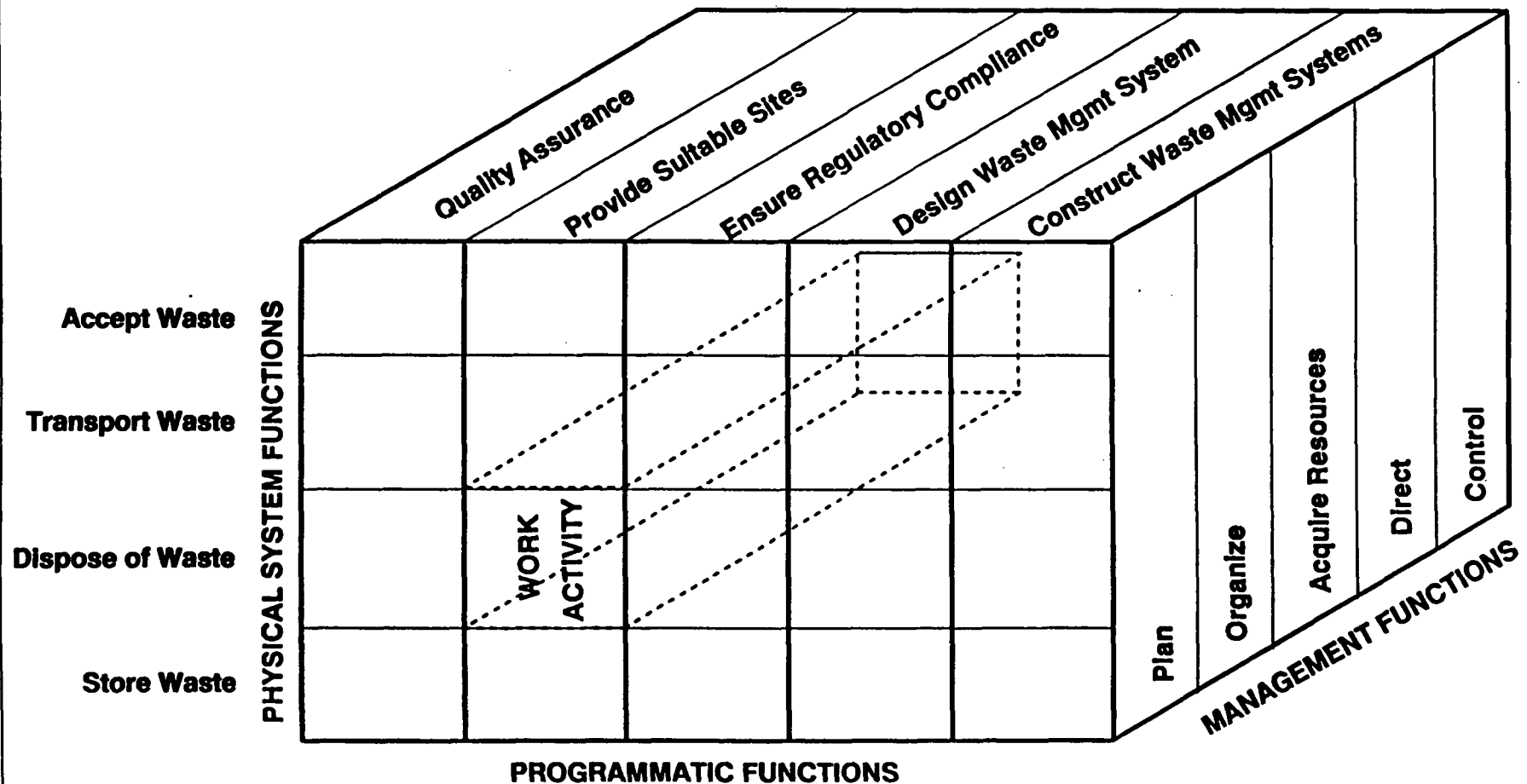


Figure 2

# Phased MSIS Implementation

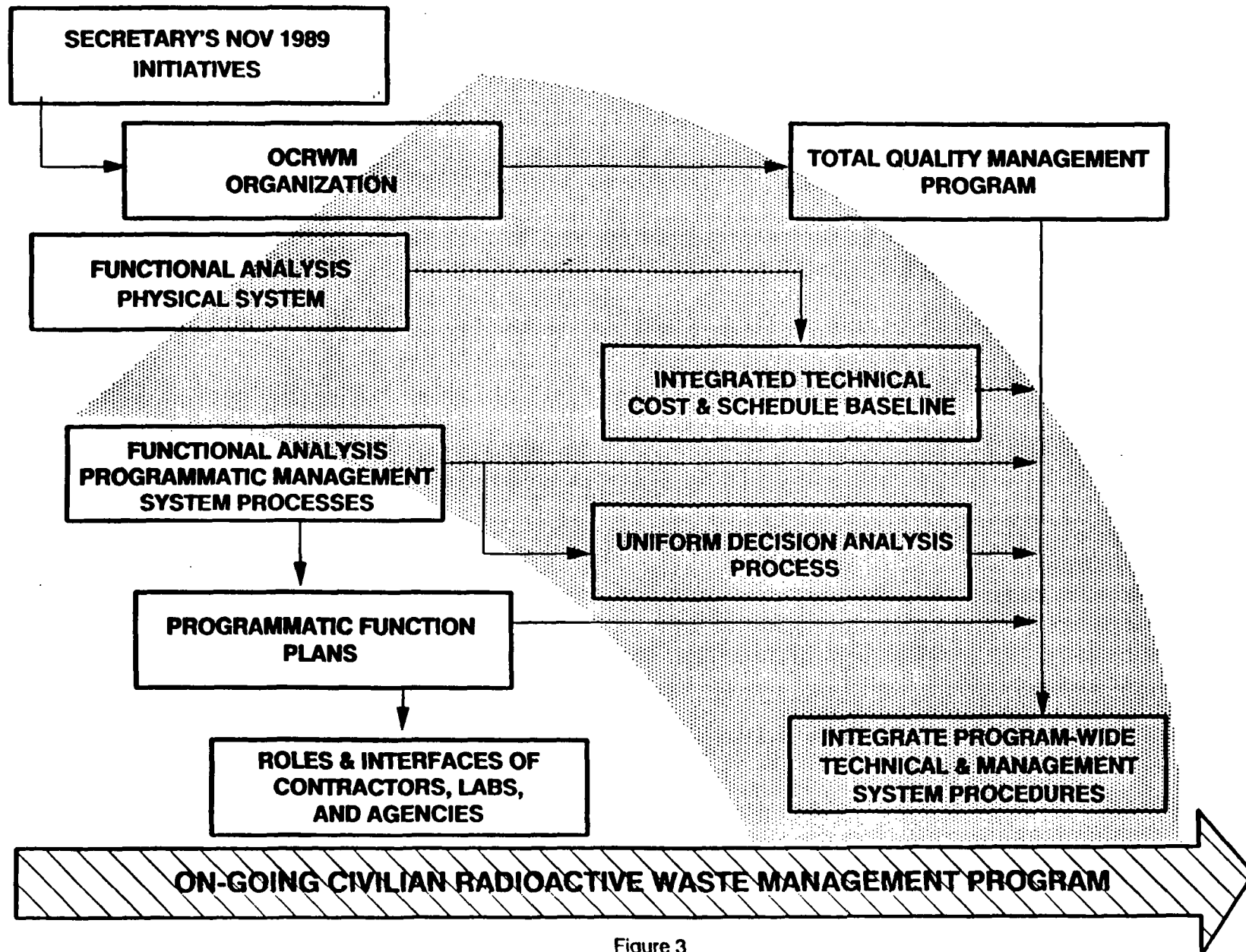


Figure 3

# Key Scientific/Engineering Activities - FY 1991

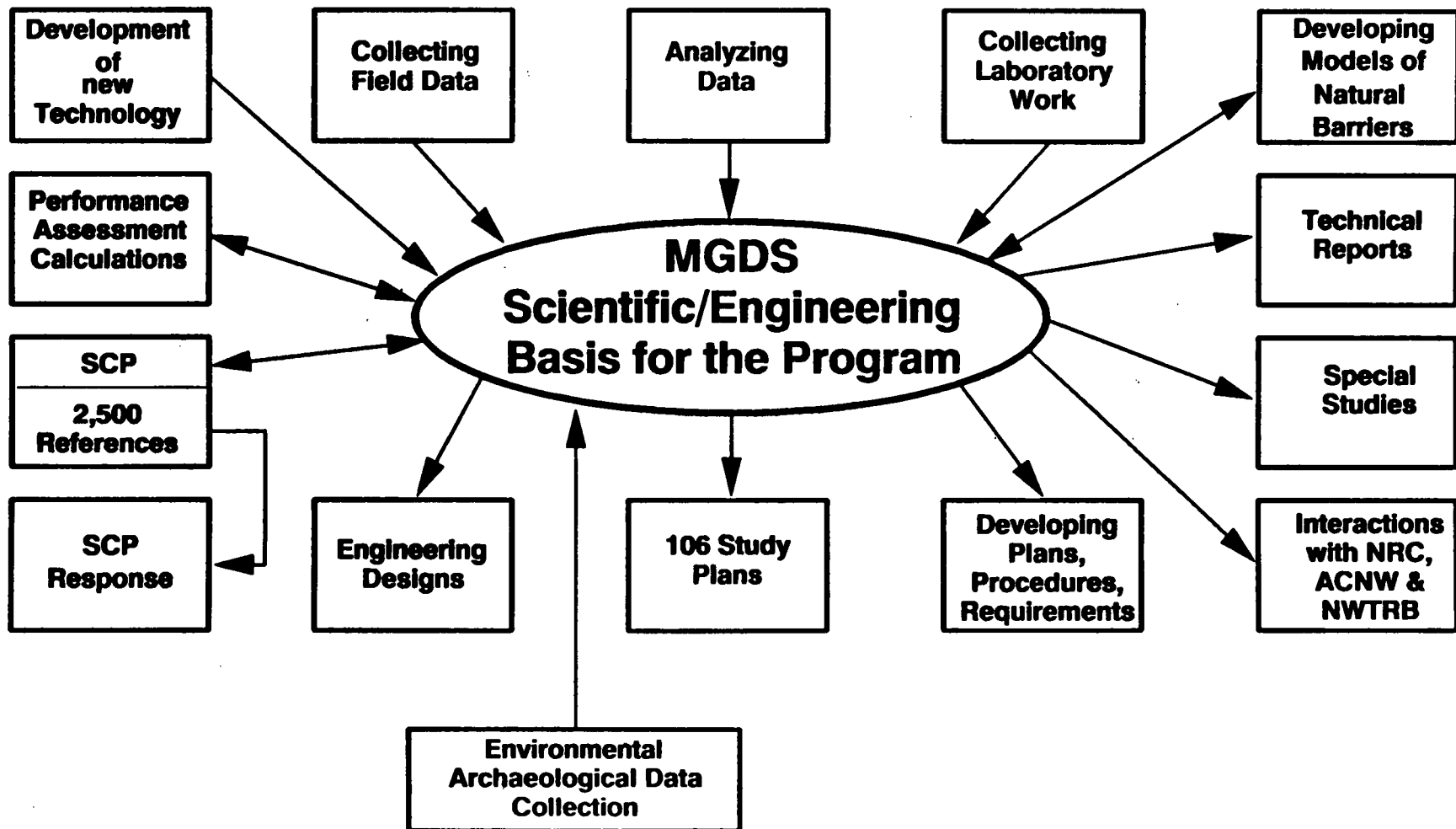


Figure 4



## Key MRS Activities - FY 1991

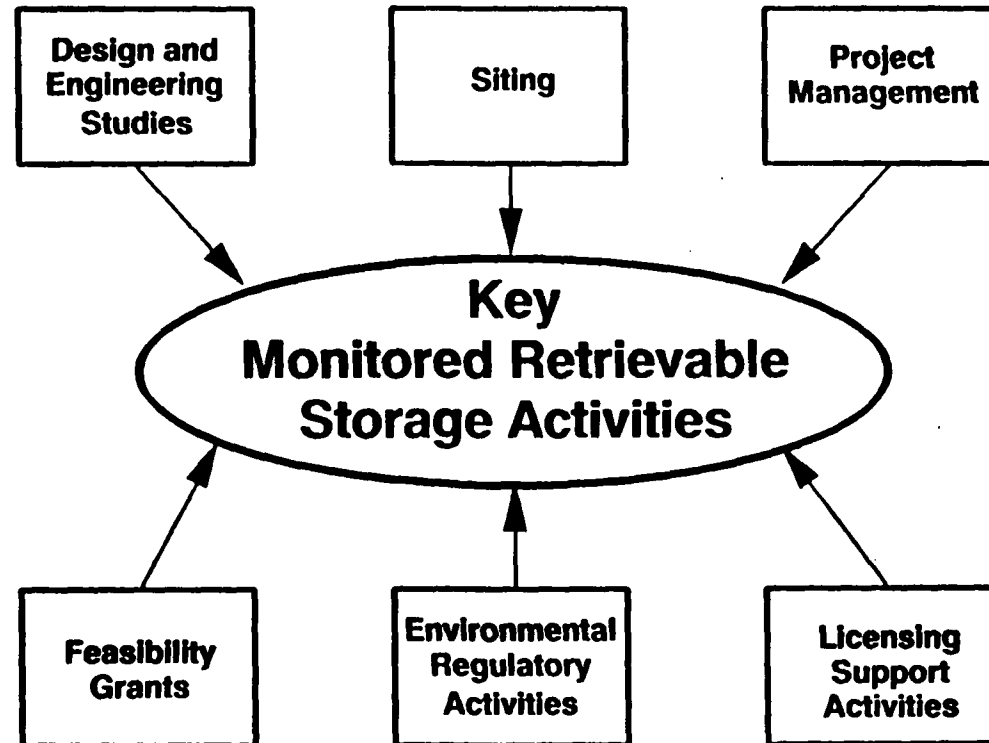


Figure 5

# Key Transportation Activities - FY 1991

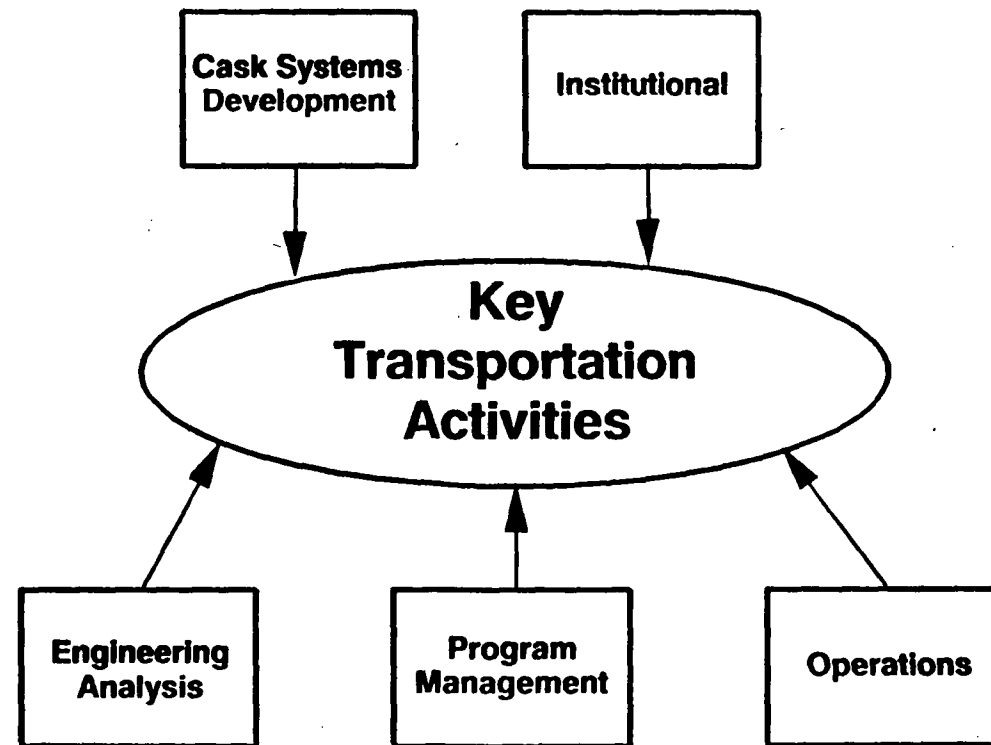


Figure 6

***PRESENTATION TO THE  
U.S. NUCLEAR REGULATORY COMMISSION  
STATUS OF THE CIVILIAN RADIOACTIVE WASTE  
MANAGEMENT PROGRAM***



***John W. Bartlett, Director  
Office of Civilian Radioactive Waste Management  
U.S. Department of Energy  
December 18, 1990***

# ***PRESENTATION TOPICS***

- ***OCRWM CREDO***
- ***KEY 1990 ACTIONS, INITIATIVES, AND EVENTS***
- ***PLANS AND EXPECTATIONS***

# ***OCRWM CREDO***

- ***WE ARE THE OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT***
- ***WE HAVE RESPONSIBILITY AS A STEWARD OF THE ENVIRONMENT TO PROVIDE A TIMELY SOLUTION FOR THE MANAGEMENT AND ULTIMATE DISPOSAL OF THE NATION'S HIGH-LEVEL RADIOACTIVE WASTE***
- ***WE HAVE RESPONSIBILITY TO PROTECT THE HEALTH AND SAFETY OF THE PUBLIC WHILE EXECUTING OUR DUTIES***

## ***OCRWM CREDO (Cont'd)***

- ***WE CONDUCT OUR ACTIVITIES AND OURSELVES ACCORDING TO THE HIGHEST STANDARDS OF INTEGRITY, OPENNESS, TECHNICAL EXPERTISE, AND PROFESSIONAL EXCELLENCE.***
- ***WE MEASURE OUR SUCCESS BY OUR CONTRIBUTION TO THE PROTECTION AND ENHANCEMENT OF THE ENVIRONMENT IN WHICH WE LIVE***

## ***OCRWM CREDO (Cont'd)***

- ***BY SUCCESSFULLY IMPLEMENTING OUR MISSION, WE WILL ASSURE THE RISK OF HIGH-LEVEL RADIOACTIVE WASTE TO FUTURE GENERATIONS IS AS ACCEPTABLE AS THE RISK TO OUR OWN***
- ***WE ARE RESPONSIVE NOT ONLY TO OUR OBLIGATIONS AS A FEDERAL AGENCY, BUT ALSO TO CITIZENS' CONCERNS AND THE NATIONAL INTEREST***

## ***OCRWM CREDO (Cont'd)***

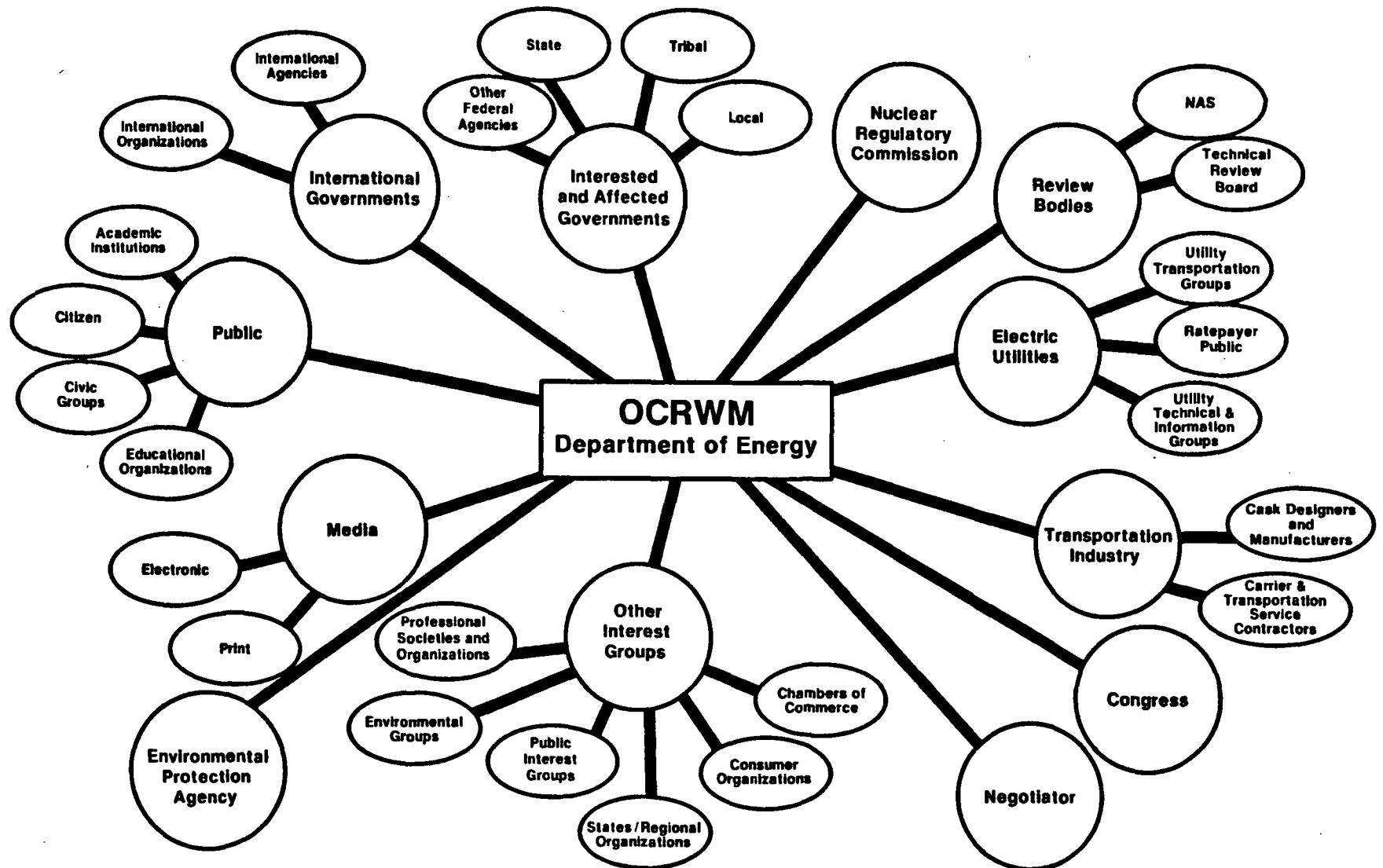
- ***WE EMPLOY TECHNICAL RESOURCES OF THE HIGHEST CALIBER AND INTEGRITY TO MEET OUR OBLIGATIONS***
- ***OUR ABILITY TO MEET OUR OBLIGATIONS TODAY WILL REMOVE A POTENTIAL OBSTACLE TO USE OF NUCLEAR ENERGY IN THE FUTURE***



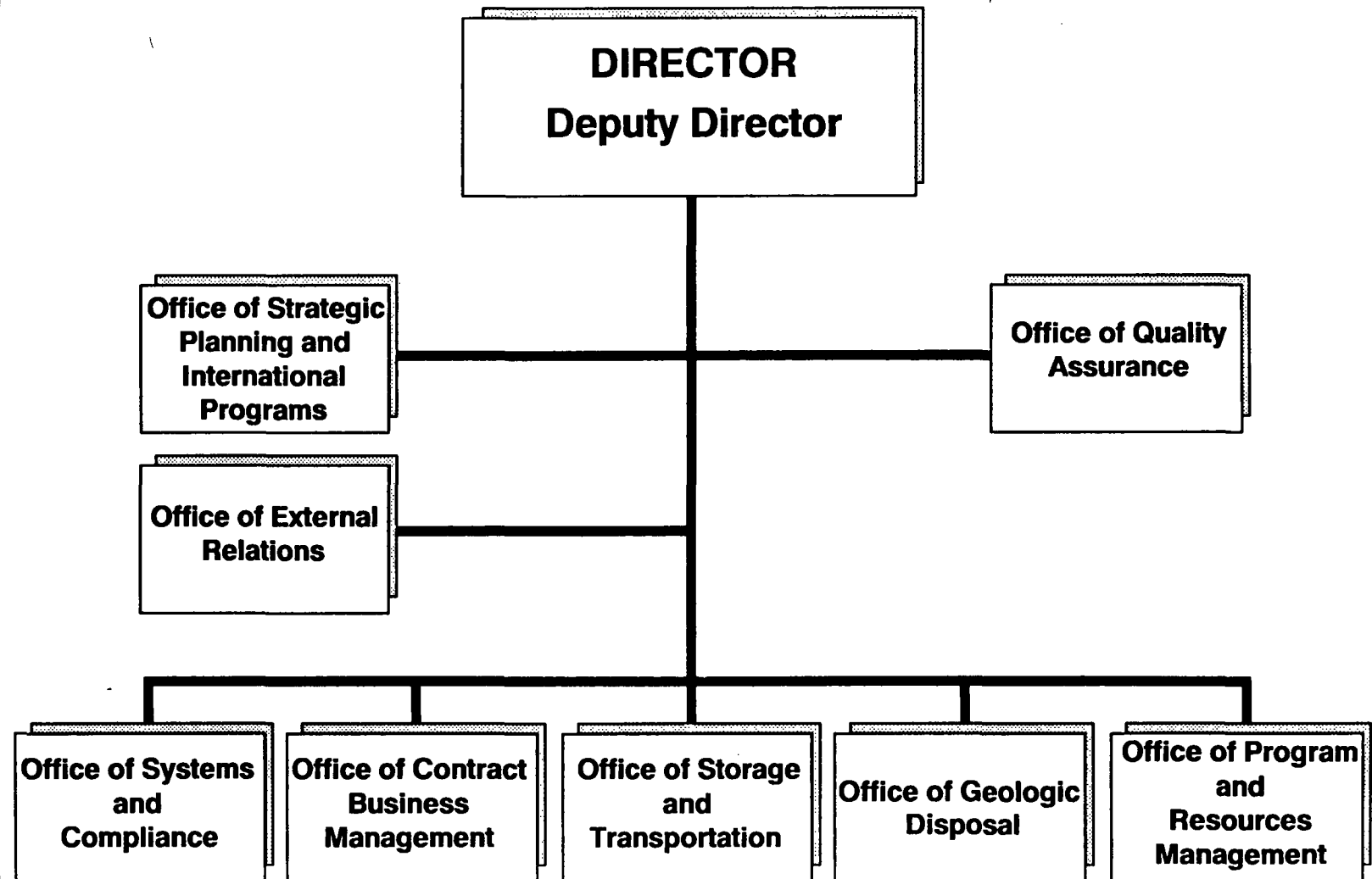
# ***KEY 1990 ACTIONS, INITIATIVES, AND EVENTS***

- ***IMPLEMENTATION OF SECRETARY'S 1989 CHANGE INITIATIVES***
- ***INITIATIVES FOR PROGRAM PROGRESS***
- ***INTERACTIONS WITH EXTERNAL PARTIES***

# INTERACTION WITH INTERESTED PARTIES



# Office of Civilian Radioactive Waste Management



# ***MANAGEMENT IMPROVEMENT HIGHLIGHTS***

- ***MANAGEMENT SYSTEMS IMPROVEMENT STRATEGY (MSIS)***
- ***OCRWM QUALITY ASSURANCE PROGRAM***
- ***ENERGY SYSTEMS ACQUISITION ADVISORY BOARD***
- ***OCRWM COST AND SCHEDULE CONTROL SYSTEMS***
- ***M&O CONTRACTOR***

# ***PROGRAM STRATEGY HIGHLIGHTS***

- ***SPENT FUEL ACCEPTANCE, STORAGE, AND TRANSPORTATION ACTIVITIES***
- ***YUCCA MOUNTAIN CHARACTERIZATION ACTIVITIES***
- ***METHODS FOR EVALUATING SITE SUITABILITY***
- ***STRATEGIC PRINCIPLES***

# ***PROGRAM PROGRESS HIGHLIGHTS***

- ***EXPANSION OF YUCCA MOUNTAIN EVALUATION ACTIVITIES***
- ***COURT AFFIRMED RIGHT TO EVALUATE YUCCA MOUNTAIN SITE***
- ***MOU BETWEEN NEGOTIATOR AND DOE***
- ***EVALUATION OF EXPLORATORY SHAFT FACILITY (ESF) ALTERNATIVES***
- ***PROGRAM-WIDE QA SYSTEM ESTABLISHED***
- ***EXTENSIVE DIALOGUE WITH NRC, NWTRB, NAS, AND OTHERS***

# ***PROGRAM ISSUES HIGHLIGHTS***

- ***NEED FOR LEGISLATION***
- ***IMPROVEMENTS RECOMMENDED BY NAS ALREADY UNDERWAY***
- ***POTENTIAL REVISION OF REGULATORY FRAMEWORK***
- ***INTERACTIONS WITH WIPP***

## ***EXPECTED 1991 HIGHLIGHTS***

- ***INITIATE MRS CONCEPTUAL DESIGN***
- ***EXPAND SITE EVALUATION ACTIVITIES***
- ***SELECT ESF DESIGN***
- ***SELECT STRATEGIC PRINCIPLES***
- ***EXTERNAL REVIEW OF SITE SUITABILITY  
EVALUATION***
- ***ISSUE MISSION PLAN AMENDMENT***