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before the
NRC Workshop on Site Characterization for Decommissioning
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Decommissioning:
Progress and Continuing Challenges

Good morning ladies and gentlemen. I am pleased to be here today to address another Site Decommissioning Management Plan Workshop.

I last addressed a site decommissioning management plan workshop in November of 1992. At that time I noted that a major effort was underway to address more clearly and unambiguously a number of obstacles to progress that existed in the decommissioning program. This morning I would like to first, revisit the 1991-1992 timeframe to provide you with a historical perspective of the status of the program, proceed to discuss some of the significant progress that has been made in revitalizing the decommissioning program since that time, and then look at some of the continuing challenges that remain, with particular emphasis on the theme of this workshop -- site characterization for decommissioning.

Historical Perspective

In 1991, when I came to the NRC as Chairman, it was readily apparent that little progress was being made in the decommissioning area. Efforts initiated in 1989 to improve the site decommissioning program had bogged down in a series of technical and regulatory issues. The program needed to be invigorated with a fundamental shift in approach from reacting passively to problems as they arose, to pursuing problem areas actively and resolving them through a comprehensive action plan. The plan-of-attack on implementing this change in approach was put forward in the SDMP Action Plan issued in April of 1992.

In general, it was apparent that to achieve substantial progress we needed three things:

- 1) to establish criteria for how clean was clean enough;
- 2) to provide some finality in the process; and,
- 3) to make a commitment to early involvement by affected parties in the process.

I consider that last element particularly important because it is only through the early involvement of affected parties that the other two actions -- setting criteria and achieving closure -- can succeed. I have noted before that the NRC effort to define a policy on "Below Regulatory Concern" failed, in large part, because of a lack of early involvement by the wide variety of interests and individuals involved in or affected by the policy. Consequently, I am totally committed to the early involvement of affected parties not only when the decision is ready to be made to release a site, but much earlier, when the basic decisions are made about how and to what degree to clean up a site.

While I am on the subject, I should also note that NRC actions to invigorate the site decommissioning program have occurred at the same time as efforts to improve our Agreement State program. One aspect of this improvement was a renewed effort to ensure active Agreement State involvement in decommissioning. As a result, we have substantially increased our outreach activities to Agreement States, including looking at alternative ways for them to provide advice and recommendations to the Commission. I am very pleased to see so many Agreement State participants in these Site Decommissioning workshops. Meetings such as these, where complex activities such as site characterization are discussed openly, are the only way to develop a consistent national approach to site decommissioning.

Recent Progress

In the past two years we have made significant progress in resolving the technical and regulatory obstacles in the decommissioning program:

- We have developed draft criteria through an enhanced public process, with the participation of the Environmental Protection Agency, to define "how clean is clean enough,"
- We have clarified NRC's expectations for timely progress in decommissioning through existing practices and new regulations,
- We have adopted rules to ensure sufficient financial resources and maintenance of records to permit safe and timely decommissioning by responsible parties,

- We have been able to release several former problem sites for unrestricted use when the radioactive contamination was reduced sufficiently, and
- We have observed progress among the remainder of the problem sites toward eventual license termination and release.

Some of these achievements deserve special note. Many of you are by now familiar with the NRC's proposed rule on radiological criteria for decommissioning. This rule is necessary to provide a predictable and reasonable regulatory framework for decommissioning while ensuring protection of the public and the environment. The proposed rule was developed through a public participation process unprecedented for the NRC, in which a wide range of interested parties discussed their views on the issues associated with radiological decommissioning criteria. A key to this approach was that all of the discussions took place in the open, in an atmosphere of shared responsibility, and prior to drafting the rule language.

At the time, we considered the enhanced participatory process, in part, to be a good way to promote broad acceptance of the eventual outcome. However, the discussions themselves led to some unexpected results: we learned from many of you who participated in the workshops that the Commission should reconsider the basic definition of decommissioning. You urged us to consider allowing release of some sites for restricted use provided certain safeguards were in place. In the proposed rule we incorporated this change and were able to develop a much stronger and more effective rule.

We were concerned about public willingness to participate and confidence in the finality of the process. We have been relieved to find that public participation has been extensive and supportive. One potential issue that seemed to concern licensees was finality --after decontamination to NRC standards, would a licensee face the need to return to decontaminate the site further because of a future, more demanding Environmental Protection Agency standard? Therefore, we were particularly gratified to have the EPA as a full participant in the workshops. Among other benefits, this encourages us to believe that decommissioning under our rule will provide finality and consistency with EPA's approach.

In reviewing our experience, the Commission believes that this enhanced participatory rulemaking provides a great example to rebut claims of unresponsive government. From a strictly health and safety perspective, the priority on this issue would generally be low. However, the public fears loomed large. Therefore, the Commission considers its resources well spent in bringing into the process many individuals who had previously felt excluded from the NRC's regulatory process, and in embarking on a program of

decontamination and decommissioning of individual sites, many of which have been worrisome to local governments and residents for too long.

We agree that public participation needs to be increased. For example, in the proposed rule on radiological criteria, we have proposed that Site-Specific Advisory Boards be established to elicit the views of affected interests early in the planning process for restricted release. In this way groups and individuals who have strong views on the subject have the opportunity to express them in a way that can result in solutions.

Your comments to date on the proposed decommissioning criteria rule suggest a broad acceptance of the major concepts reflected in the rule, but there are disparate views on how and why the rule should be modified further. We look forward to discussions this week and at the workshop on Site-Specific Advisory Boards next week for additional exploration of alternative approaches.

In addition to the enhanced participatory rulemaking process, we have also improved the regulatory framework for decommissioning through rulemakings on timeliness, financial assurance, and record keeping. The timeliness in decommissioning rulemaking was completed this past July and provides a specific schedule for notifying NRC about inactive contaminated areas and for submitting decommissioning plans. The schedule includes development of and an opportunity for review of a site characterization plan. The rule also permits licensees to request departures from the standard 24-month schedule for decommissioning where justified. One such reason could be that the complexity of the site environment precludes completion of site characterization in the time allowed under the rule. The staff is currently developing guidance on implementation of the timeliness rule.

The rulemaking on decommissioning record keeping also was completed last year. This rule seeks to ensure that the necessary operational records are available at the time of decommissioning in order to identify those areas that have been contaminated or "affected" through the use of nuclear materials. In addition, the Commission will soon consider the final rule on decommissioning financial assurance. This rulemaking will fill several existing gaps in the regulations regarding the amount of financial assurance for decommissioning necessary for a licensee to maintain, especially those licensees who are currently in timely renewal.

Beyond rulemakings, the NRC staff has also made progress in overseeing the decommissioning of specific sites listed in the Site Decommissioning Management Plan. Through the hard work and cooperation of licensees, site owners, NRC staff, states, other Federal agencies, and interested parties, a number of SDMP sites across the Nation have been released successfully, including sites in Teterboro, NJ; Pawling, NY; Cleveland, OH; Philadelphia, PA; and

Parkersburg, West Virginia. The fact that the total number of sites on the SDMP is growing should not dishearten us about continued progress in decommissioning. We anticipated such growth as NRC continues to screen the tens of thousands of sites whose licenses were previously terminated and which might not have been adequately remediated prior to release years ago.

In an attempt to increase the effectiveness of the process, NRC has also initiated closer coordination and consultation with state agencies and with the Environmental Protection Agency on the remediation and release of specific sites. I urge your continued cooperation in making timely progress in remediating the sites, to avoid the more adversarial enforcement process provided for in the SDMP Action Plan. NRC is attempting to do its part efficiently and cooperatively to ensure timely decommissioning by licensees and responsible parties.

Continuing Challenges

Despite this progress, much remains to be accomplished in the decommissioning program. With heightened emphasis on streamlining and improved government performance, NRC finds itself having to do more with less. To achieve this objective, we must remain open to alternative approaches that are more efficient, responsive, and effective, yet adequately protect public health and safety and the environment. This workshop is but one example of new approaches the NRC is pursuing to improve communications. Through conferences like this, NRC can share experiences gained in reviewing decommissioning projects, while also benefiting from your collective wisdom in shaping a more effective, efficient, and responsive program.

This particular workshop grew out of discussions at the workshop on radiological termination surveys held last June. A large number of the attendees specifically requested that NRC hold a workshop on site characterization, pointing out that in their opinion we were placing "the cart before the horse" -- many of the SDMP sites and other contaminated sites are still at the front end of the process, site characterization, rather than at the termination stage. So here it is, a workshop on site characterization.

This clearly is one of the most significant challenges faced in the decommissioning program today. Determining how much data is sufficient to characterize a site adequately is difficult and full of pitfalls. If it is any consolation, I would point out that those of you who are facing difficult choices in determining how much site characterization is enough are not alone. These same choices were faced by utilities in the past in the siting of nuclear power plants. The Department of Energy is currently struggling with the question in its multi-billion dollar study of the proposed high-level radioactive waste repository site at Yucca

Mountain, Nevada. Having said that, however, I must also say that one almost sure way to have problems in decommissioning is to initiate removal of contaminated materials without fully understanding the extent of contamination or the properties of the environment being remediated. In several cases, licensees have squandered their own resources (and increased their NRC fees) through false starts in decommissioning -- a classic case of penny-wise and pound-foolish. In describing an overall approach to site characterization, I would repeat a point I emphasized in my last address to an SDMP workshop -- DO IT RIGHT THE FIRST TIME.

We recognized the need to provide guidance on "the right way" to characterize a site when we developed the SDMP Action Plan. The Plan described the guidance, available at the time, on acceptable approaches for site characterization. Since then the staff has developed and distributed a preliminary draft Branch Technical Position on Site Characterization for decommissioning. Concurrently with this workshop, the staff is distributing a revised draft of the guidance to stimulate constructive dialogue on acceptable approaches to site characterization. After considering comments derived from this workshop, the staff will present a final position.

The development of site characterization guidance in the branch technical position reflects a maturing of the staff's understanding based on the experience gained over the last several years. For example, the staff now recognizes that different amounts and types of information are needed to support alternative decommissioning approaches. If a licensee intends to remove all of the contamination down to NRC's limits for release for unrestricted use, the amount of site characterization prior to the beginning of remediation may be somewhat limited. In contrast, an approach that employs onsite disposal of the radioactive contamination may require substantially more information to support not only the analysis of the long-term performance of the disposal cell, but also the design of the disposal cell and the environmental evaluation through which NRC compares the alternative actions in support of its decision to approve a decommissioning plan.

We also recognize that ours is not the only experience when it comes to site characterization. The Department of Energy is spending millions of dollars each year to refine existing techniques and develop new methods for characterizing contamination at the defense complex sites. The Environmental Protection Agency is building upon its extensive knowledge base in site characterization for Superfund sites, which include a host of chemical and radiological contaminants. The Defense Department also has considerable expertise in assessing environmental contamination at the thousands of sites in our Nation and abroad. I am very pleased to see these agencies participating in today's workshop.

Recognizing the shared goals of each of these agencies in site

characterization, we have strongly supported the development of a single guidance document that Federal agencies can use in characterizing environmental contamination. The agencies have made progress in the last year in developing a joint guidance document on field surveys. We hope to expand the scope of this effort to include other important aspects of site characterization, such as groundwater assessment and subsurface investigations. By developing one guide rather than four, we will have saved resources and, more importantly, enhanced the consistency and coherency in federal programs. We expect that these efforts will ultimately contribute to enhanced public confidence in decommissioning activities carried out by or regulated by the federal government.

There are, of course, other challenges in the decommissioning program, challenges which include the safe disposal of radioactive waste, demonstrating compliance with the release criteria, and accomplishing everything at a reduced cost. With the closure in July of the Barnwell low-level waste disposal site to generators outside the Southeast Compact, waste generators today have few alternatives for disposal. Some of you might think that this would reduce the Commission expectations for timely decommissioning. This is not the case. I would point out that the Commission published the timeliness rule only 15 days after the closure of the Barnwell site to out-of-compact waste. The Commission remains determined to protect public health and safety through the safe and timely decommissioning of SDMP sites and other, non-operational contaminated sites. This is especially true at sites where contamination is present in unrestricted areas or where it is migrating toward or beyond site boundaries.

The implementation of the proposed rule on decommissioning criteria, if promulgated in its current form, will also pose significant challenges to the NRC and licensees. Many of these challenges can be linked directly to difficulties in site characterization, specifically, the need to use complex models as a basis for demonstrating compliance with the criteria. Many members of the public harbor a healthy and, in some cases, well deserved skepticism of complex models and the results that are derived from them. This skepticism poses a challenge in the area of risk communication and characterization, a challenge that can be confronted by acknowledging the limitations of the models and by bolstering the assessments with credible and accurate descriptions of the existing site conditions and potential conditions. This reinforces the need to ensure that site characterization for decommissioning is done right the first time and that the results are presented in a manner that can be easily understood. In this way we will be able to build public confidence that appropriate remedial actions are well planned and implemented and that they will provide for the protection of the public and the environment. This is especially important if the contamination will be stabilized onsite in close proximity to neighborhoods.

Conclusion

I have touched on just a few of the areas in which we have made progress and on some of the continuing challenges that I see in the dynamic field of decommissioning. Let me close today by emphasizing the importance of public understanding of the decommissioning process and encouraging you to commit to doing it right the first time. From a relative risk standpoint, decommissioning may not pose as large a risk as other activities that NRC regulates. However, there is a perception that residual radioactive contamination may pose a more insidious risk because the potential exists for people to be exposed to radiation unknowingly. Public perception of risk can be almost as important as the reality of safety. Future challenges in decommissioning will involve communicating with diverse groups the benefits and hazards of actions taken today to protect the public not only in the current generation, but for generations to come. Consistent with the theme of this workshop, such long-term projections can only be made reliably on the basis of solid site characterization.