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Tel. 301-504-2240

Remarks by
Ivan Selin, Chairman
U.S. Nuclear Regulatory Commission
at the
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Good morning, ladies and gentlemen. I'm sorry I can't be with you in person for the opening session of this Second Annual OIG Conference. However, with a little help from modern video technology, I am pleased to be able to welcome all of you to this important planning session. I believe that these sessions will help enhance the quality of NRC programs. Because the Commission is committed to taking into account all the knowledge and expertise it can obtain in making its decisions, I am especially pleased to welcome congressional, industry, and public interest group participation in this conference.

As most of you are aware, the NRC's Office of the Inspector General provides the Commission an independent review and appraisal of NRC programs and operations. This process should go beyond just observing an activity. It should help us identify root causes of problems that are observed. By focusing on root causes of problems, auditors should function more like inspectors than investigators. However, the audit process must keep its focus on program effectiveness, efficiency, and integrity.

This conference is designed to help the Inspector General's staff focus on the issues of importance to the NRC in the coming years. It will, hopefully, assist the IG staff in structuring its annual audit plan. But most importantly, it should bring into focus the safety mandate that is the primary responsibility of the Commission. The OIG provides additional eyes and ears for reviewing processes related to the agency's safety mandate. We are interested in the reviewer's observations as well as in suggestions on how NRC programs might be improved. NRC has traditionally taken a bottom-up approach in addressing safety concerns. The OIG top-down approach provides a valuable complement to this process.

The Chief Financial Officers Act has mandated the establishment of performance measures. Specifically, the Act requires agencies to develop financial management systems that will systematically measure the performance of agency programs. Performance measures are intended to help program managers, agency officials, the Commission, the Congress, and the public to understand better the effectiveness of agency programs. However, development of a good "Performance Measure Program" requires a clear and precise agency mission statement and program objectives.

The Nuclear Regulatory Commission's mission is to assure adequate protection of the public health and safety, and the environment in the use of nuclear materials in the United States. To carry out this responsibility, we regulate commercial nuclear power reactors; nonpower research, test, and training reactors; fuel cycle facilities; medical, academic, and industrial uses of nuclear materials; and the transport, storage, and disposal of nuclear materials and waste.

To implement the mandate of the Chief Financial Officers Act, the NRC staff has recently developed a list of proposed agency performance measures for Commission consideration and approval. Perhaps the Commission will have acted on this proposed list of performance measures by the time you see this video tape. However, I would like to emphasize that many of our programs are complex and so performance measures must necessarily be multidimensional. Thus, these measures cannot be used in isolation to assess NRC programs. For example, a timeliness measure or the number of occurrences of certain events, by themselves, may not necessarily address the quality aspects of an NRC program.

The proposed list of measures includes both "output" and "timeliness" measures. The list contains agency-wide performance measures, reactor safety measures, materials safety measures, and financial performance measures. Some of the measures were identified by OMB and are expected to be common across several agencies. Others have been internally developed and relate only to the nuclear arena. With regard to our regulation of nuclear power reactor licensees, they provide a view of nuclear plant operational performance. They help reviewers to recognize areas of concern in operating plants. They allow for the identification of plants, facilities and activities that are improving their safety culture.

A complete list of NRC performance measures should have been available by the time this conference begins. Undoubtedly, it will be among the many topics of discussion. During your discussions, you should keep in mind that many of these measures

will require adjustment or modification over time. Developing a good set of performance measures is necessarily an iterative process. The process will require clearly stated program objectives, performance measures, and performance standards by which performance can be judged. Once established these objectives, measures, and standards will guide the audit process in evaluating the effectiveness, efficiency, and integrity of our regulatory programs.

I will not review the complete list of performance measures with you this morning. Instead, I will use my remaining time to address two associated issues. First, I will review the performance measures the NRC has already identified and in which we have gathered data for meaningful outcome measures. Secondly, I would like to discuss briefly another ongoing NRC initiative -- the establishment of performance measures for our inspection program.

Performance Measure Programs

Some NRC programs have associated quantitative indicators which are routinely used in assessing performance. Many of these programs are proactive. That is, they go beyond routinely responding to accidents and address ways to try to prevent accidents. Proactive programs are regulatory surveillances to head off occurrences of abnormal or serious plant events during operations. These performance measuring programs include the Systematic Assessment of Licensee Performance or SALP program, Performance Indicators, Individual Plant Examinations, Tech.Specs., Resident and Regional Initiative Inspections, and Diagnostic Evaluations.

These programs are of critical importance to the NRC because they help identify potential problems and permit corrective action to be taken before an accident happens. These programs focus on the more prevalent -- but less significant -- incidents and unsafe plant conditions.

The NRC Performance Indicator Program is used as an analytical device in conjunction with other methods of assessing licensee performance. The performance indicators are: (1) automatic scrams while critical, (2) safety systems actuation, (3) significant events, (4) safety system failure, (5) equipment forced outage rate, (6) equipment forced outages per 1000 critical hours, and (7) collective radiation exposure. When used judiciously, these seven indicators can provide useful input to NRC management decision-making and industry analysis regarding the need to adjust plant-specific regulatory programs and operational performance, but they are not a panacea for making integrated operational judgments. The results of routine and special inspections, the Systematic Assessment of Licensee

Performance (SALP) and the totality of the NRC's information gathering process must be brought together if valid and reliable judgments concerning plant performance are to be reached.

The effectiveness of NRC's programs for preventing accidents can be enhanced by trending the causes of incidents. Instead of looking at each incident as a unique occurrence with specific causes, the incident can be viewed as the result of more generic, programmatic shortcomings that allowed specific events to occur. These programmatic shortcomings become more apparent with the effective use of statistics and by the observation of trends.

Reactive programs also play a vital role in ensuring adequate protection of the public health and safety. Reactive measures are often centered on abnormal occurrences at the plant. Safety and regulatory lessons are then derived from these occurrences. Short-term lessons learned can either be of a plant-specific or a generic nature. Corrective actions most often take the form of normal or escalated enforcement actions, orders, and bulletins. Long-term issues can lead to generic safety issues, new rules and regulatory guides. The more serious events trigger AIT, and IIT inspections and can lead to events analyses and core damage projections and longer-term generic actions.

Several of the proposed performance measures are associated with these reactive programs. These measures describe how well the NRC is eliminating major reactor safety concerns, how well the NRC controls the licensing process, and the NRC's timeliness in approving implementation of certain new safety requirements.

The accident sequence precursor program is another example of a reactive program. It is reactive in that it estimates the conditional probability that an event that has already occurred will lead to core damage. Nuclear power plant events identified as precursors to various core damage sequences are analyzed and integrated with plant conditions and the reliability of standby safety equipment. The result is an overall estimate of the conditional core damage probability.

Between 1969 and 1990, the observed core damage probability exhibited a downward trend in the overall sum of the conditional core damage probabilities. The individual core damage probabilities depend on the frequency of precursor events and the severity of conditional core damage probabilities. The decline in the sum of conditional probabilities since the 1970's is attributable to the combined results of several major regulatory actions as well as to industry efforts taken to deal with the causes of major precursors observed in the 1970's. Other regulatory and industry actions also may have contributed to the decline, but would be much more difficult to correlate. Several

efforts are underway to provide additional insights from existing Accident Sequence Program data. Efforts to evaluate trends in Accident Sequence Program results and the underlying causes will continue.

Regulatory requirements arising from operational experience, licensing lessons, risk analysis, and policy matters must also be addressed and resolved in a timely manner. It is through these kinds of reactive actions and licensee initiatives that plant performance is impacted. Performance measures can help focus and sharpen this process.

Inspection Program

The second major program area that I want to discuss with regard to performance measures is our inspection program. Substantial agency resources are devoted to operating reactor oversight, and particularly, to the Reactor Inspection Program. It is essential that the inspection program management and resources are effective in meeting agency objectives. Performance measures can go a long way in helping to ensure that agency objectives are achieved.

The staff has defined program objectives for the operating reactor inspection program, has established preliminary performance measures, and is in the process of evaluating the program to the defined objectives. The inspection program consists of three major elements: Core Inspections -- the minimum inspections done at all plants; Area of Emphasis Inspections -- the special inspections that focus on specific safety issues; and Regional Initiative Inspections -- those inspection activities which, at the discretion of the regional administrator, can be used to resolve plant-specific safety issues found during other inspections or as a result of plant events. The NRC has designed the inspection program to examine selectively the licensee's activities and programs to verify that the licensee is fulfilling its obligations for safety.

Each of these major elements has a defined set of objectives. The staff has identified measures that will be applied to evaluate whether the elements of the inspection program are achieving the stated objectives. These measures are being implemented and evaluated to assess their suitability for candidate performance measures. Because the goals of the inspection program may not lend themselves easily to quantifiable measures, a final set of performance measures may take several iterations.

In addition to these initiatives, the EDO has also recently directed the Office of Policy Planning and NRR to undertake a broad review of the reactor inspection program. The review will

assess the overall effectiveness and health of the inspection program and its self-assessment and management process. The review will consider such questions as: (1) How do we measure the impact of this program and its initiatives on utility performance? (2) Is the percentage of agency resources dedicated to operating reactor oversight and inspection at the appropriate level? (3) Is the process working well for evaluating the effectiveness of the program and making appropriate changes? and (4) Is the focus on safety and performance vs. compliance appropriate?

The NRC and its licensees share a common responsibility for assuring the protection of public health and safety. Statutes, Federal regulations, and the NRC regulatory program are important elements in providing this assurance. NRC licensees, however, have the primary responsibility for the safe use of nuclear materials. NRC's mandate is exclusively regulatory: it is emphatically not promotional. I see the agency's duty as ensuring that existing nuclear power plants are operated safely, with proper regard for national security and for environmental values.

To a great extent, the NRC's role, as I see it, consists of making sure that the efforts of the nuclear industry are both deep enough to solve known problems and broad enough to ensure that attention is given to important areas before problems arise. In this regard, not only must NRC perform extensive evaluations of individual plants, but it must also look broadly at areas such as training, waste management, and maintenance.

In conclusion, I would like to thank all of you for taking part in this workshop. Interchanges such as these serve everyone's interests. Each of us has at least one goal in common -- that any and all nuclear facilities, now or in the future, should be well designed, well built, well run, and well regulated, for the protection of the health and safety of all Americans. Your participation in this workshop contributes to accomplishing that paramount objective.

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