

United States Nuclear Regulatory Commission
Office of Public Affairs
Washington, DC 20555
Phone 301-415-8200 Fax 301-415-2234
Internet:opa@nrc.gov

No. S-99-07

“Reflections of a Regulator:
Six Elements of Responsible NRC Oversight”

by

Dr. Shirley Ann Jackson, Chairman
U.S. Nuclear Regulatory Commission

Regulatory Information Conference
The Capital Hilton Hotel, Washington, D.C.
March 5, 1999

Good morning ladies and gentlemen. It is always a pleasure to address this conference. Since this will be my last attendance at a Regulatory Information Conference (RIC) as Chairman of the U.S. Nuclear Regulatory Commission (NRC), when considering subjects to discuss this year, I reviewed some of the comments I have offered in previous years. I can tell you that I found two recurring themes. First, I noted a consistent emphasis on the importance of communication. In 1995, I spoke to this conference as a Commissioner of the NRC, and said that, “while science has made giant strides in communication in recent years, there still is a lot to be said for simply paying attention to one another.” I reiterated that message in my first talk to the conference as Chairman in 1996, in which I said that “while we [the regulator and the regulated industry] may not always agree on every issue, we can ensure an open dialogue, so that difficult issues can be resolved in a spirit of cooperation.” To enlarge on that point: I always have believed that the regulatory process should be participatory, with input from all stakeholders—including the industry being regulated, but also including members of the public, public interest groups, and representatives of the public in Congress and State, local, and tribal governments. This communication should include direct expressions of opinion, healthy debate and discussion, and, if possible, the development and presentation of alternatives—what we refer to as “straw men.”

The second recurring theme relates to my vision of the role of the health and safety regulator in a changing environment. Essentially, from the beginning of my tenure as NRC Chairman, I have articulated a three-part vision for the NRC: reaffirming our fundamental health and safety mission, enhancing regulatory effectiveness, and positioning for change. This means that the NRC must be clear about what the appropriate role of the regulator is, must know where the health and safety “line in the sand” is, and must regulate to that standard. We must be willing and able to take appropriate action, when and where warranted, to redress unacceptable performance of any of our licensees. Indeed, we must have requirements, which we enforce, to ensure that licensee performance does not get to unacceptable levels before the NRC acts.

Indeed, these lessons have been reinforced in recent years, in certain specific instances with specific licensees. I will not reiterate the litany of cases here, but, the need to deal with such situations, which can, and often do, cause great public outcry and can threaten the very credibility of the regulator, forms the backdrop against which we work, and from which we must derive lessons. And we have done that.

As new influences emerge and as new regulatory tools are developed, the regulator continually must become smarter and more focused in carrying out its regulatory functions in a way that maintains a safety focus but does not add a particular bias—in either direction—to the viability of the industry being regulated. In the oversight of our power reactor licensees, as you know, this is a complex challenge. Today I would like to discuss with you six elements that I believe have been and will continue to be the keys to meeting this challenge.

1. Regulatory Job Performance

The first element concerns how well we perform as regulators—how we go about doing our jobs. This includes approaching regulatory oversight in a more business-like and efficient manner; ensuring a consistent risk-informed perspective, with regulatory attention focused in the areas of highest priority; and implementing results-oriented (performance-based) regulatory programs. While regulation, by its nature, is a burden, an approach to regulatory oversight that incorporates these elements will ensure that only the necessary level of burden is imposed on our licensees—no more, and no less. Let me give you several examples in power reactor regulation of areas in which I believe we have taken this approach.

◆ Improved Reactor Oversight Process

Perhaps no single initiative better illustrates what can be accomplished through engaging in cooperative problem-solving and effective communications than the proposed improvements to the reactor oversight program. As a result of rigorous internal discussion and debate, and extensive interactions with industry, public interest, Congressional, and State entities, the NRC staff has proposed to the Commission a new assessment framework, which builds upon the cornerstones of licensee performance that must be monitored to ensure that nuclear power reactor operations do not pose unacceptable risks to the public. As part of this assessment framework, the NRC staff and stakeholders have identified performance indicators, performance indicator thresholds, and risk-informed inspections that would supplement and verify the validity of the performance indicator data.

This assessment framework provides a natural basis for a risk-informed baseline inspection program—a program that identifies the minimum level of inspection required, regardless of licensee performance, to ensure adequate NRC oversight and assessment of licensee performance. Developed using a risk-informed approach, the proposed baseline inspection program includes a comprehensive list of inspectable areas within each cornerstone of the assessment framework.

As currently proposed, the assessment process will integrate the performance indicators with the results of the risk-informed baseline inspections. This integration will allow the NRC to make objective conclusions regarding licensee safety performance, and to communicate these results effectively to licensees and to the public. Even more significantly, the process includes specific thresholds—tied to the cornerstones of safety—that will trigger commensurate licensee and/or NRC action if they are exceeded.

The process will provide both continual and periodic assessment of licensee performance.

While the Commission continues to review NRC staff proposals in this area, it is important to recognize that this is a work in progress. Indeed, this should remain a work in progress. To quote Ray Kroc, “When you’re green, you’re growing. When you’re ripe, you rot.” The proposed program, in fact, any proposed program, must continually reassess itself, must continually learn and grow. Thus, while the current proposal may not satisfy all concerns from all parties, it represents a substantial improvement in our regulatory approach. I have been encouraged by the logical and systematic approach of the program, and I will rely on improvements being made as all involved continue to gain insight. The proposed six-month pilot program, which would begin in June, will be a key factor in evaluating this new approach.

◆ Risk-Informed Initiatives

A second example relates to our risk-informed regulatory initiatives. Stakeholder input played an important part in the formulation of the NRC Probabilistic Risk Assessment (PRA) policy statement and the formulation and initial use of NRC guidance on risk-informed regulation. As a result, the NRC has approved pilot applications in the areas of graded quality assurance, in-service testing of pumps and valves, and in-service inspection of important reactor plant piping. In each of these applications, our consideration of risk information provided a strong basis for a graded treatment of the regulated activities at certain licensee facilities, which allows both the NRC and licensees to focus resources on equipment and activities with the greatest risk significance. These pilots have demonstrated that the implementation of risk-informed programs, developed and reviewed cooperatively, can be accomplished without a significant change in risk, and that an acceptable level of quality and safety will be maintained as we work to reduce unnecessary regulatory burden.

The Commission currently is considering the next step—the extent and schedule by which we should risk-inform Part 50 to the Code of Federal Regulations. Activities in this area will be crucial to bring an added degree of coherency to our regulations by arriving at risk-informed definitions and scopes for the requirements under which reactor plants will operate.

◆ Changes to Key Regulations

In October 1998, the Commission published for public comment proposed revisions to 10 CFR 50.59. Under this regulation, licensees are allowed to make certain changes to their facilities without prior NRC approval. The revisions to the rule are intended to clarify NRC requirements and to allow changes that will have minimal impact on the facility licensing basis. The impetus to take on what has proven to be a difficult task, given the breadth of applicability of this rule, was the result, at least in part, of input from the licensed power reactor community. As a result of stakeholder input, the proposed rule which was released for comment would improve clarity over the existing rule language. Stakeholders also were active in providing comments on the proposed rule, and without pre-judging the result of Commission deliberations on the final product, I will say that there is every indication of a new rule that both will improve the effectiveness of this regulatory process and reduce unnecessary NRC and licensee burden.

While proposed revisions to 10 CFR 50.59 provide a degree of burden relief to power reactor licensees, proposed changes to 10 CFR 50.65, the Maintenance Rule, may add a degree of necessary burden. In the proposed revision to this rule, power reactor licensees would be required to perform assessments of plant risk in the course of performing maintenance. While I understand the sentiments of many licensees who see this action as burdensome, I also understand the NRC staff view that this rulemaking is required to respond as a responsible regulator to changes in industrial maintenance practices. The Commission expects to vote on this issue this Spring.

2. License Renewal

The second element of meeting our challenge as regulators requires that we allow for the continued operation of existing plants—in a way that may provide a positive benefit from the standpoint of capital investment. Establishing a stable, predictable, and timely license renewal process that ensures the protection of public health and safety and the environment has been and continues to be a top NRC priority. The Commission has issued a policy statement laying out its expectations for a focused review of license renewal applications, built upon our license renewal regulations, 10 CFR Part 54 and Part 51. We have established a License Renewal Steering Committee to elevate promptly any issues that require management attention. I have charged the NRC Executive Council with overseeing the license renewal reviews, to ensure that adequate resources are applied, and to raise issues to the Commission as necessary. Using case-specific orders, the Commission has established an aggressive adjudicatory schedule for reviewing the Calvert Cliffs and Oconee license renewal applications, aimed at completing the license renewal process in 30-36 months. NRC management meets monthly with the applicants to monitor progress and the resources expended, and to resolve license renewal issues.

As a result of these efforts, all milestones for our license renewal reviews have been met. Last week, we issued the draft environmental impact statement for the Calvert Cliffs application. The initial safety evaluation report should be completed on schedule this month. In the absence of a hearing, the NRC anticipates completing its review and a Commission decision on the Calvert Cliffs renewal application by May 2000, 25 months after it was submitted.

In addition to the Calvert Cliffs and Oconee applications, we expect to receive our next license renewal application in December 1999 from Entergy for their Arkansas Nuclear One plants. Other applications may follow quickly, and we have asked for sufficient resources in our FY 2000 budget to handle the anticipated new activity. Looking forward, continued dialogue with potential applicants will be important in ensuring that intentions are understood and resources allocated appropriately. Your continued feedback and the incorporation of lessons learned from these initial reviews will help to enhance and streamline subsequent reviews.

3. Responding to Changes Introduced By Electric Utility Deregulation

The third element of meeting our regulatory challenge involves our response to the changes introduced by the deregulation of the electric utility industry. As the transition to a competitive market has begun to take shape—with changes involving internal utility restructuring, ownership changes, mergers, and cost-reduction measures—we at the NRC have worked to understand and respond appropriately to the effects of the changing business environment on nuclear safety. NRC areas of focus related to electric utility restructuring have come in four general areas: (1) impact of cost-competitiveness on safe nuclear operations; (2) electrical grid

reliability; (3) the availability of funds for decommissioning; and (4) license transfers. In past conferences, I have spoken to you about each of these issues. For the purposes of this discussion, I will focus on updates in the area of decommissioning funding assurance and license transfers.

On September 22, 1998, the NRC amended its regulations on decommissioning funding for nuclear power plants to reflect the conditions expected from rate deregulation. The amended rule modifies NRC decommissioning regulations in four areas.

- First, it identifies which licensees may use the external sinking fund method of financial assurance for decommissioning exclusively, and identifies additional financial assurance mechanisms that may be used for decommissioning.
- Second, it permits nuclear power plant licensees to take credit on earnings for prepaid decommissioning trust funds.
- Third, to keep the NRC informed of decommissioning fund status, it requires licensees to report periodically to the NRC on the status of their decommissioning funds and on any changes to their external trust agreements.
- Fourth, it adds a definition of "Federal Licensee" to further clarify the issue of which licensees may use statements of intent.

The NRC has taken several other significant actions in this area, including the development of staff guidance for antitrust reviews, licensee financial qualification reviews, and decommissioning plan reviews.

We also have seen an increase in license transfer applications, primarily as a result of corporate restructuring in anticipation of electric utility industry deregulation, but also due to the sale of nuclear power plants. To ensure that license transfer reviews are conducted effectively and promptly, in December 1998 we issued a rule that provides uniform rules of practice for hearing requests associated with license transfer applications. We also are developing guidance documents for use in evaluating these transfers, to determine whether a proposed transferee is technically and financially qualified, as well as to guide the evaluation of foreign ownership and control limitations. Numerous meetings have been held with nuclear power industry representatives, State and Federal rate regulators, the financial community, and other NRC stakeholders. The overall effect of these measures has been to improve the awareness and preparedness of the NRC, our licensees, and the public for dealing with issues related to electric utility restructuring. I should note that the first agency license transfer review is proceeding on schedule, and agency action is expected to be completed later this month.

4. Certification of Next-Generation Reactor Designs

The fourth element involves the certification of next-generation reactor designs. By the late 1970s and early 1980s, the experience gained in licensing existing U.S. nuclear power plants indicated that the licensing process for new nuclear power plants could be improved in ways that would enhance safety, improve efficiency, and reduce industry and agency uncertainty by achieving earlier resolution of technical and policy issues. However, taking advantage of this insight, as you know, proved to be an arduous effort that included attempts at legislative reform, a Commission Policy Statement on Standardization, extensive litigation, and the issuance of 10

CFR Part 52, a reformed licensing process that provides for combined construction and operating licenses, early site permits, and certified standard designs.

In May 1997, I had the unique experience of presiding over the NRC certifications of the General Electric Advanced Boiling Water Reactor (ABWR) design and the ABB-Combustion Engineering System 80+ design. These certifications marked the final step in a 10-year effort that encompassed the development and promulgation of Part 52, the implementation of the design certification process, and, overall, the most rigorous technical and safety reviews ever performed for a nuclear plant design.

In September 1998, we issued a Final Design Approval (FDA) to Westinghouse Electric Company for the AP600 design (a 600-megawatt pressurized water reactor). The issuance of this FDA marks the completion of a 6-year technical review phase, and signifies the NRC readiness for initiation of the design certification rulemaking phase. This safety review was particularly challenging for the staff because the AP600 uses many design features that are not found in current operating reactor designs. The most significant design difference is the use of safety systems that rely primarily on passive systems, using basic forces such as gravity, natural circulation, and stored energy for plant safety and accident mitigation.

Even given the advantages of these next-generation designs, the timing and likelihood of renewed demand for nuclear construction in the U.S. remains unclear. The design certification process, however, has been effective in providing enhancements to safety in design, drawing from experience in a manner that will increase the efficiency of the licensing process. In addition to the efficiencies provided by the “one-step” licensing process, we expect that our efforts in risk-informed regulation, on the one hand, and license renewal, on the other hand, will allow the development of an equal degree of discipline in licensing new plants, as that opportunity arises.

5. Maintaining Public Confidence

The fifth element of meeting our regulatory challenge involves maintaining public confidence, by ensuring that we have effective processes for meaningful public participation and intervention; by increasing the objectivity and results orientation of our regulatory approach; and by providing scrutability and transparency in our decision-making. In one area of continuing challenge, we must take and are taking steps to improve the effectiveness and integrity of our petition processes under 10 CFR 2.206, through which members of the public seek NRC action to ensure compliance with requirements and adequate protection of the public health and safety. As you also are aware, we have initiated a closer look at how the agency carries out its investigation and enforcement functions. Also, through stakeholder interactions, we have invited constructive criticism from industry and public interest corners, and have tried to be responsive to the expressed concerns.

6. Institutionalizing Change

The sixth and final element relates to institutionalizing change. The Strategic Assessment and Rebaselining effort that I initiated shortly after I became Chairman allowed us to respond to the requirements of the Government Performance and Results Act (GPRA), while also laying the groundwork for the development of a multi-year Strategic Plan, agency-wide Performance Plan, and individual office-level operating plans. This effort has burgeoned into a dynamic planning framework known as the Planning, Budgeting and Performance Management (PBPM) process,

a framework designed (1) to establish a sensible, reliable process for defining agency goals; (2) to develop cost-effective strategies for achieving those goals; (3) to determine the resources needed to implement this strategic direction; and (4) to measure and to assess our own progress and overall performance. This framework will ensure the longevity and endurance of current regulatory reforms, by incorporating these reforms into our existing Strategic Plan, Performance Plan, and operating plans. This approach will ensure that current changes will be institutionalized in a manner that ensures long-term organizational effectiveness.

Summary and Conclusion

All of the efforts related to these six elements have occurred against a backdrop of emergent issues with specific licensees, such as Millstone, Maine Yankee, and Commonwealth Edison. I believe that we took a disciplined approach toward dealing with these licensees, and drew on the lessons learned to identify broad areas requiring improvement in our own performance. As one example, the new assessment process, which I already have discussed, had its genesis in changes to the NRC Senior Management Meeting (SMM) process, prompted by the identification of deficiencies in our ability to detect and respond to declining trends in licensee performance. The SMM changes were implemented to ensure that, in fact, we were building on inspection results, documenting these results in the Plant Issues Matrices (PIMs) in a consistent manner, and using standardized SMM plant evaluation templates linked to the PIM categories. Proceeding in this way also introduced performance indicators and the regular use of risk information in assessing the significance of inspection findings and enforcement decisions, and required greater scrutability of the overall results, focusing more directly on licensee results, rather than relying on “promissory notes.” These principles, in fact, are fundamental tenets of the assessment process that now is emerging.

I repeatedly have said, and on occasion, have admonished others that the NRC is not the Nuclear Reactor Regulatory Commission, but the Nuclear Regulatory Commission. As such, we have accomplished all that I have described in the reactor regulatory arena, and more, even as we have done a business process re-engineering of materials licensing; certified the USEC gaseous diffusion plants; provided regulatory oversight of the USEC privatization; initiated rulemakings on medical regulation and fuel cycle facilities-to make them more risk-informed; carried out our responsibilities under for the nation’s high-level waste (HLW) program; refocused our spent fuel activities under the Spent Fuel Project Office; renormalized our research program; carried out a pilot program on NRC external regulation of DOE facilities; and on and on—all while having reorganized the NRC; changed the senior management ranks; enhanced the staff-to-management ratio across the agency; instituted a new Planning, Budgeting and Performance Management (PBPM) process; implemented a new Agency-wide Documents Access and Management System (ADAMS) and a new financial/resource management system; improved procurement, including a new process for IT procurement; and achieved a myriad of other accomplishments—while continuing to carry out our day-to-day, week-to-week basic regulatory programs, including responding to numerous emergent issues; processing license amendments; interfacing and being responsive to the Congress; and working with our international partners to enhance nuclear safety worldwide.

The road ahead is not straight forward, and, indeed, is fraught with many potential stumbling blocks, but the NRC is on the move. We are not naive about the difficulty of managing change, but we are, and we must remain, committed to the path we are on. By keeping our regulatory vision before us, by improving our internal processes, and by communicating and working with all of our stakeholders we will have shifted, in short order, the regulatory paradigm.

People often ask me about what I hope will be my “legacy” as the Chairman of the NRC. A legacy, I believe, transcends individual actions—and in fact transcends even the individual—and refers to those attributes of an organization that will endure. I would like to think that my legacy will include an emphasis on critical thought on discipline, a questioning of what it is we are doing and why. We are not a business, but we are incorporating business-like practices to improve effectiveness and efficiency. I believe that I am leaving an agency with a renewed desire to bring coherency, defensibility, and scrutability to the actions it takes. I also would like to be remembered as a balanced regulator—an independent regulator; one who sought to reduce unnecessary burdens on licensees, but who was willing to make difficult decisions, and to impose significant sanctions when called for; a regulator that, while not a cheerleader for the nuclear power industry, was and is a believer in the role of nuclear power in our nation’s energy mix, was acquainted with the goals of the industry and, to the extent possible, took pains to ensure that the government was not an unjustified impediment to the achievement of those goals. But, as with all public figures, what constitutes a legacy becomes the province of others, and I leave that to you and your judgement. But I believe that the initiatives I have described and our success is leading the NRC to attain the three-part vision I have articulated—of maintaining our fundamental health and safety mission, enhancing our effectiveness as regulators, and positioning for change.

Let me close by saying that, over the past four years, I have appreciated your support, your criticism, and your suggestions as I carried out my duties as the NRC Chairman. I sincerely will miss interacting with the domestic and international nuclear community on a daily basis. While all of us have not always seen eye-to-eye on the issues before us, I have great respect for all of you—NRC staff, regulated entities, public interest groups, and our international colleagues—as representing the very best the world has to offer in this field. Thank you for your attention, and I wish you all every success in your endeavors.