

What's Your Aim?

Michael Weber, Deputy Executive Director for *Transformation*
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Good afternoon. On behalf of the Nuclear Regulatory Commission, allow me to add my greetings to those of the Chairman, Commissioner Magwood, and NRC staff for this Annual Meeting of the Organization of Agreement States. It is a pleasure to be here with you in Chicago. I thank NRC's Region III and Illinois for working with the OAS in hosting this important meeting and for the opportunity to share my perspectives with you.

In addition, I also compliment the OAS leadership for your close coordination and collaboration with the NRC in preparing for this annual meeting. NRC benefits significantly from participating in this meeting as an opportunity to hear the perspectives of the Agreement States, our partners in protecting people and the environment. It also gives us the opportunity to catch up with you on activities that are important in our regulatory partnership.

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As you are aware, the Commission approved the merger of the Office of Federal and State Materials and Environmental Management Programs and the Office of Nuclear Material Safety and Safeguards last month. We are fortunate to have both Brian Holian and Cathy Haney participating in this annual meeting. As the offices merge by early October, Cathy will continue as the director of NMSS and Scott Moore, whom many of you know, will continue as the Deputy Director of the new office. Brian Holian is transferring to our Office of Nuclear Reactor Regulation as the deputy director. I want to publically thank and commend Brian Holian for his leadership of FSME for the last couple years. Brian's leadership has been instrumental in championing numerous and important initiatives for the agency, including the Radiation Source Protection and Security Task Force, Part 37 implementation, the proposed rule on medical use regulation in Part 35, development of the proposed rule on low-level waste disposal in Part 61, potential revisions to radiation protection requirements in Parts 20 and 50, and many of the other initiatives that the Chairman highlighted in her remarks this afternoon. Thank you, Brian, and take with you our best wishes for your continued success and the strong partnership that you helped build with the Agreement States.

With all these changes, one thing that is not changing is the prominence and importance of the Agreement States as regulatory partners. The new office will continue to report to the Deputy Executive Director for Materials, Waste, Research, **State**, Tribal, and Compliance Programs. The Commission and the Executive Director for Operations, Mark Satorius, expect that these organizational changes will enhance our partnership with the Agreement States, through increased effectiveness and efficiency. Although the scope of the new Office of Nuclear Material Safety and Safeguards will significantly increase, we are fortunate to have two seasoned and high performing executives as the leaders of the new office in Cathy and Scott, and continuity at the program level of the executives Laura Dudes, Pam Henderson, Larry Camper, Drew Persinko, and others at both the leadership and staff levels. If you detect any

diminishment of performance or service, please advise us promptly via phone call, email, or meeting at your earliest convenience. Like the DHS slogan reminds us, “If you see something, say something.” We’re here for you and seek to strengthen our partnerships with and service for you.

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As the Chairman previewed, I am currently leading an NRC project called Project Aim 2020. The purpose of the project is to transform the NRC and improve our service to the Nation. Mark asked me to take on this assignment earlier this year, so I stepped out of my normal role as the Deputy Executive Director for Materials, Waste, Research, State, Tribal and Compliance Programs, and assumed my current role as Deputy Executive Director for Transformation. In considering this, I had some concerns about what would happen in my absence, but I was fortunate to have such a capable, experienced, and insightful leader in Roy Zimmerman to backfill for me and Mark Satorius as the EDO. I had confidence that our mutual and important work would progress unabated in our service to the public. Besides, I am right down the hall from Roy and Mark, and ready to lend assistance or serve as a “life line” if needed.

Now some of you may be thinking – that’s nice, Mike, but what does it mean for me and my Agreement State program. After all, isn’t this just another Federal initiative? A “flavor of the month?” We’ve seen this before. The wind will blow by, the dust will kick-up and settle again, and we’ll be back to normal in short order. This is different. This project is intended to be truly transformative and change the NRC with whom you have all grown accustomed – change for the better. Moreover, as partners in ensuring the safe and secure use of radioactive materials, you likely face many of the same challenges and uncertainties that we do. Consequently, I expect that the improvements that we institute through Project Aim 2020 will be relevant to you. We want to share them with you as we proceed and gain your input and perspectives. In addition, you should be able to leverage our work to improve your own organizations, capabilities, and strategies. Help us help you. Let’s get “there” together.

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The world is experiencing change at an unprecedented pace, as reflected in social, cultural, economic, political, and technological advances around the globe. Experts on societal change have noted that the first decade of the twenty first century has experienced as much change as the previous century combined. I have even heard one estimate that the 21st century alone will produce about “10,000 years’ worth of changes.” “Game-changing” products and services that historically appeared every five or more years now are introduced every few months. Mobile devices, communications software, and other tools to support the demands and pace of modern society are constantly being refreshed and enhanced. This rate of change is unlikely to slow down any time soon. Consequently, it is important for us to monitor the changing environment, consider the implications of these changes on our operating environment and workload, and proactively achieve our safety and security mission.

In case you doubt the pace of change, talk with our colleagues of the Millennial generation (born between 1982 and 2000) about what life was like “way back when” before cellular communications, the Internet, and laptop computers and tablets. Besides technology and generational changes, other long-term trends and changes are reshaping our operating environment, both positive and negative, including:

- Increases in cyber threats, crimes, and vulnerabilities to exploitation

- Proliferation of weapons of mass destruction
- Increases in the accessibility and lethality of robotics
- Changes in the composition and diversity of the workforce
- Migration of the US population to smaller cities and rural locations in the south, while urbanization accelerates in many parts of the world
- Emergence of China and India, along with other nations, as economic powerhouses
- Tightening constraints on US Federal funding associated with growth of entitlement programs and increase in the National Debt
- Globalizing commerce and governance
- Increasing global political instability
- Growing distrust and dissatisfaction in large institutions

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Earlier this year, the NRC experienced a convergence of forces that prompted Project Aim. These included the impact of the lessons learned from the Fukushima-Daiichi accident, increase in operating nuclear power plant licensing backlog, growth in annual fees for licensees without a commensurate improvement in the quality of service, and reduction in demand for licensing and regulating new nuclear facilities. These forces followed changes that NRC experienced over the preceding five years, including the early closure of operating nuclear power plants, a court ordered revisiting the Waste Confidence decision and associated rulemaking, the shutdown and subsequent restart of the Yucca Mountain repository licensing review, the centralization of corporate functions in our corporate offices as part of the Transforming Assets into Business Solutions or “TABS” project, and the shutdown of the NRC for the first time in our 40-year history. The NRC has proven repeatedly its ability to adjust to significant changes; we successfully navigated change in establishing the agency, responding to the accidents at Three Mile Island and Chernobyl, revamping the reactor oversight process, reinventing the materials program, and strengthening security and incident response after the terrorist attacks on 9-11. Seen through the lens of today’s internal and external stakeholders, it just seems to take too long and is too costly. This combination of external and internal factors helped to crystallize the need for Project Aim 2020.

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So what is Project Aim 2020? The Nuclear Regulatory Commission is conducting this project to improve the NRC’s planning, operational excellence, agility, and performance. The Executive Director for Operations, in collaboration with the Chief Financial Officer, launched the project in June 2014. The project team is gathering perspectives from internal and external stakeholders to forecast the future workload and operating environment in 2020. We are identifying key strategies and recommendations to transform the agency during the next five years to improve how NRC accomplishes its safety and security mission. The intent of the project is to position the agency to be more proactive or “pre-sponsive” to circumstances outside of NRC’s control. After review by the Commission, the agency’s performance management process and planning framework will incorporate the forecast strategies, and NRC will implement recommendations for change in the form of a roadmap of changes – quick hits, short-term, and longer-term recommendations.

The Aim project team reports to the Executive Director for Operations and the Chief Financial Officer. I lead the team, which includes several full-time staff with extensive technical, financial, communications, and project planning expertise. Steve Baggett, whom many of you know, is a

member of the project team. A “Guiding Coalition” of respected leaders, including Laura Dudes, Dan Collins, Brian McDermott, and others you know from throughout the agency meets regularly with the team to provide feedback and advice as the project moves forward. We also meet on about a monthly schedule with the Office Directors and Regional Administrators and every other month with the Commission. The project team will provide its recommendations to the Commission by December 2014.

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This slide generally depicts our approach in conducting this project. We recently developed and are refining several scenarios of the future, as part of our scenario analysis. We are not trying to predict the future, but we are attempting to think through how the agency can best prepare to meet this uncertain and dynamic future. The development and use of future alternative scenarios is only a means and not an end in itself to improving our planning and budgeting. The real benefit of scenario analysis is fostering greater agility and flexibility and responding more nimbly, flexibly, and promptly when changes are necessary in response to external and internal drivers. This is the primary focus of Project Aim 2020. How can the agency be more agile now, not just several years in the future, but next week or next month when change is warranted and expected? How can we best enhance the agency’s performance while recognizing the benefits that derive from a balanced approach, providing for “dynamic stability” in an uncertain and changing world? After all, we are not interested in changing for the sake of change, but rather making strategic changes to boost agency performance and responding proactively to our workload and operating environment.

The centerpiece for the project is our gap analysis – identifying process changes, strategies, and capabilities needed to accomplish our mission for a range of scenarios and to make the agency more agile, proactive, flexible, effective, and efficient. We are also identifying barriers or other impediments that may prevent the agency from accomplishing its mission unless we change now and in the near future. We are well on our way in collecting information and perspectives through numerous focus group sessions with the Guiding Coalition, supervisors and managers, and NRC employees. Through my participation in this OAS Annual Meeting, I have been informally soliciting your insights and suggestions. If OAS would like a more formal opportunity to participate, we’d be happy to conduct a similar focus group session with you, our regulatory partners in the National Materials Program. We have been analyzing the information that we have collected as participants have shared it, with the objective of distilling the insights into specific recommendations and assessing those recommendations for mission value, relevancy, and effectiveness. When our analysis is complete, we will provide recommendations to the Commission for consideration by the end of 2014. In addition, along the way, we plan to request an external organization to provide an expert assessment of both the process and the substance of our project.

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One particular feature of our gap analysis is focused on strategic workforce planning, to provide high confidence that we will have employees with the right skills and talents at the right time to accomplish the agency’s mission. Based on the work that we have conducted so far, a significant need that we share with the Agreement States is ensuring sufficient radiation protection professionals. We have been supporting and following with interest the initiative led by the National Council on Radiation Protection and Measurements (NCRP), with the avid cooperation of the Conference of Radiation Control Programs Directors and the Health Physics Society (HPS), and others. “Where are the Radiation Professionals?” has been a topic of great

interest to the NRC for a number of years. Perhaps, this question should be asked with more of a forward focus like “Where will the Radiation Professionals be in 2020?” “Will there be enough of them?” And “will they have the right skills and talents?”

This is not a new issue for us. The Health Physics Society alarmed us all about the dwindling number of radiation professionals in a position statement in 2001, just before the terrorist attacks in New York City, Washington, and Pennsylvania. The Society updated the position statement in 2005. That position statement recognized the declining number of US citizens enrolling in science and technology graduate degree programs between 1993 and 1999, especially in the fields of math, engineering, and the physical sciences. In health physics, in particular, the number of graduates decreased by 55% at all levels between 1995 and 2002, as the number of health physics programs constricted in US universities. The HPS summarized the results of their analysis in its Human Capital Crisis Task Force Report of July 2004.

The Task Force report featured an entire chapter on the existing and projected workforce needs for State radiation protection programs. Based on responses to a survey from State agencies (56% response rate), the Task Force estimated that the state programs employ over a thousand radiation protection specialists and had a relatively small percentage (1.5%) of vacancies at the time of the survey in 2003. The largest number of these specialists was devoted to radioactive materials regulation. About 93% of these positions were desired to be filled with individuals who had at least a 4-year radiation safety degree, yet only about half of the people filling the positions (55%) had such a degree. The State agency results of the 2004 Task Force report were generally consistent with similar projected gaps in other sectors of the radiation protection field, including the energy sector, Federal government, research and development, academia, and medicine.

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Kathy Pryor, Past President of the HPS, shared the results of a more recent survey in the February 2014 edition of the HPS *Health Physics News*. The HPS inserted specific questions in its 2013 annual survey of Society members to support NCRP’s WARP initiative. Although the survey response rate was relatively low (14%), the results of this survey were even more troubling in warning of a potential gap of radiation protection professionals in the near future. Approximately 10% of respondents indicated that they planned to leave the health physics workforce in the next five years; 51% responded that they plan to retire within the next 10 years. The survey also found that a few employment sectors are dominated by older workers, who might be expected to retire within a shorter time horizon. This was particularly the case for health physicists employed in the federal and State government sectors. In the next 10 years, 52 and 70% of respondents indicated their intent to retire from Federal and State government agencies, respectively. In fact, every employment sector indicated a greater than 30% projected retirement rate in the next 10 years, with the exception of government contractors (71% self employed, 51% national laboratories, 66% nuclear power utilities). The HPS concluded based on the 2013 survey that a focused Federal effort must be supported to expand and fund academic programs to train radiation professionals.

As a frequent chairman of Management Review Boards, I found the projected retirements in the State agencies to be particularly troublesome. We have all seen how the loss of a handful of experienced and competent radiation professionals can destabilize a regulatory program and substantially weaken program performance. But a handful is far less than the nearly 700 projected retirees from State programs over the next 10 years. I am generally considered an optimist and seldom as a harbinger of doom and destruction. Consequently, it is important to

recognize that these projections are based on a very low response rate and not all State and Federal radiation professionals are members of the Health Physics Society. On the other hand, the survey reflects the intent of HPS members to retire within the next 10 years, and not other losses that could exacerbate the projections, such as involuntary separations, promotions, and transfers. Although the numbers may be soft, they certainly warrant prompt attention and beg the question of whether we are collectively doing enough to prepare our agencies to succeed in the future by supplying one of the most basic resources required to regulate and achieve radiation safety – the skilled, talented, competent, and experienced professionals we rely on daily to accomplish our mission.

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So what is the status of the NCRP's WARP initiative? Dr. John Boice, current NCRP president, summarized the results of the current assessment in the April 2014 HPS newsletter. The WARP drew from numerous and diverse perspectives that were shared at a July 2013 workshop involving not just Federal agencies, but also State agencies, nuclear power, medicine, national laboratories, and other sectors. The States were ably represented by Dave Allard of Pennsylvania. NCRP made the results of the workshop publicly available on the Council's website and shared the highlights in the April newsletter:

- NCRP agrees that now is the time to act with a coordinated, broad-based, and comprehensive effort to address the dwindling number of radiation professionals and propose realistic and achievable solutions
- Baby boomer retirements will severely affect the number of radiation professionals available for medicine, nuclear power, national defense, environmental restoration, and emergency response
- A surge capacity needs to be developed through better coordination of federal assets and a national "reserve corps" of volunteer radiation professionals to respond to a radiological emergency
- Improved coordination is needed among government, academia, and the private sector to ensure national capability to manage radiological incidents and maintain the radiation sciences enterprise
- Increased federal support of academic education programs and basic research in radiobiology, medical countermeasures, improved detection capability, and nuclear forensics is essential, which the future will be bleak
- Radiation professionals are needed now to meet the requirements of the nation today and tomorrow. Professionals are needed who understand the evolving science of radiation in the world today, with goals to ensure the safe use of radiation for the health and welfare of the U.S. population and to respond to radiological incidents.

Each of the participants were asked to present their insights using quadrant charts to describe each organization's mission, what the organization does, how the organization does it, and the organization's needs for radiation professionals. Analysis of the information presented by Dave and his Federal counterparts indicates that the most common needs among the agencies are filling immediate vacancies for radiation professionals (82%), succession planning in preparation for known and projected retirements (71%), and building surge capacity for responding to radiological incidents (47%).

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I understand from Dr. Boice that the NCRP is nearing completion of its statement on the WARP initiative. We look forward to receiving these results by the end of 2014. This information will be useful for us in identifying key strategies and performing strategic workforce planning as part of Project Aim. It will also help us in guiding our programs for developing the nation's radiation protection workforce. How can these results be most useful to you? What are the results of your "gap analysis" in staffing your agency over the next decade and preparing for succession? Do you have a "gap" or would the word "nadir" be more descriptive of your particular situation? What is your aim?

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As I conclude my presentation and you prepare for the discussion, I encourage you to work with NRC as we conduct Project Aim 2020 and help us help you in the National Materials Program. We have a lot of work ahead of us over the next several months. I am personally committed to preparing the NRC and the Agreement States to succeed well into the future. I know that through collaboration we can help each other to succeed as partners and thus best serve our citizens. Thank you for participating in the 2014 Annual meeting of the OAS, and thanks for what you do daily to accomplish safety and security. I hope that you have had and will continue to have a great annual meeting here in Chicago and that you will help us with our aim!

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