The Deputy Secretary of Energy
Washington, DC 20585

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MEMORANDUM FOR LINTON F. BROOKS
UNDER SECRETARY FOR NUCLEAR SECURITY

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FROM: CLAY SELL

SUBJECT: Integrating Safety into Design and Construction

The following information outlines my expectations regarding effectively integrating safety into projects. We must identify and resolve safety issues as early in the design process as is practicable. By so doing, we can address safety in a manner that will result in minimal project delays and fewer cost overruns. This is what sound project management is about, and this is why the Secretary and I have placed such importance on effective project management. This is not only good safety; it is also good business. As stewards of the country's defense nuclear facilities, we cannot have one without the other.

Program Strengths. The Department is focused on effective implementation of our project management program. I see five major strengths we can build upon in better integrating safety into design early in our project lifecycle.

1. Our project management program has the right goal – "to deliver capital assets on schedule, within budget, and fully capable of meeting mission performance and environmental, safety, and health standards."

2. Our project management order and manual are significant steps moving us forward in instilling the required discipline into the acquisition of major capital assets.

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3. The Department is moving forward with the certification of our Federal project directors.

4. The Department has a strong set of safety rules and directives, and we need to build on this foundation by making necessary clarifications and amplifications.

5. The Department has strong Integrated Safety Management systems implemented at our facilities, and we are implementing the Secretary's 2004-1 implementation plan to institutionalize and revitalize our safety management implementation.

Program Weaknesses. Recent history shows that we can improve our performance by adequately identifying and resolving safety issues early in the design cycle. Although safety is an integral part of the project management, we need to improve how safety is incorporated into design, especially in the early project planning phases. Projects such as the Waste Treatment Plant at Richland, the Salt Waste Processing Plant at Savannah River, and the Sandia Underground Reactor Facility make clear the need to better incorporate safety into early design activities.

1. In terms of policy, we need to revise and reissue the DOE Order 413.3, *Project Management for the Acquisition of Capital Assets,* originally issued in October 2000, to bring it into agreement with the Manual. Based on experience and feedback, we have identified a number of worthwhile improvements to clarify and strengthen the project management order, including the following: (a) more complete description of safety expectations for early design steps as well as for project completion and turnover; (b) clarification of the expected use of the graded approach by identifying clear expectations, including more complete expectations for acceptable use of design/build approaches; (c) clear requirements regarding safety qualification of individuals involved in project management and integrated project teams; (d) clear references to the required safety rules, directives, and standards; (e) more complete coverage of tailoring and safety issues at ESAAB meetings; (f) provisions for safety oversight by the Chiefs of Nuclear Safety; (g) provisions for safety engineering reviews by the Office of Environment, Safety and Health for projects over $4 million; and (h) more complete requirements for after-action reports to promote effective learning from experience.

2. While we pursue changes to the project management order to better control and verify that safety is being adequately addressed, we know that line management, not the project management staff organization, owns the responsibility for developing designs using sound engineering practices.

In terms of implementation, the line programs need to better staff their project teams with the necessary design engineering and safety expertise to ensure safety requirements are properly identified, translated into the project's design documents, and maintained in effect throughout the procurement, construction, and testing phases of the project. Where this expertise is not readily available within the Department, I expect the line programs to contract this expertise. Line programs also need to more clearly define contractual expectations regarding the early integration of safety into the alternative studies and project design.

3. In terms of safety oversight, the Chiefs of Nuclear Safety are implementing their milestones in the Secretary's 2004-1 implementation plan and will soon begin providing effective oversight on the selection of safety requirements and standards for design and construction, and translation of expectations into contract requirements. I also expect the Chiefs to review project team make-up and contractor oversight, and sample safety hazard analyses, facility hazard categorization, safety analyses, safety system identification and performance categorization, and resolution of design and construction safety issues so that they can provide feedback and input to their Central Technical Authorities regarding whether they have confidence that the project teams have effectively integrated safety considerations into design and construction work activities.

Expectations. Please find below my top-level expectations regarding integrating safety into project design and construction. To the extent that you have not fully realized these expectations, I am now directing the responsible organization parties to identify specific actions to close the gaps between our performance and our expectations, and take those actions on a deliberate pace to fully meet these expectations.

1. I expect safety to be fully integrated into design early in the project. Specifically, by the start of the preliminary design, I expect a hazard analysis of alternatives to be complete and the safety requirements for the design to be established. I expect both the project management and safety directives to lead projects on the right path so that safety issues are identified and addressed adequately early in the project design.

2. I expect my line organizations to follow the requirements defined in the project management order and manual. The Secretary's August 2005 memo made it clear that he expects compliance with these directives.

3. I expect line project teams to have the necessary experience, expertise, and training in design engineering, safety analysis, construction, and testing.

4. I expect that the Chiefs of Nuclear Safety will provide safety oversight during the design, construction, and testing phases of our projects.

5. I expect staff work and presentations to the ESAAB to be sufficiently complete so that they highlight tailoring issues and safety issues that need management attention. I expect every ESAAB review to include a discussion of relevant safety issues.

6. I expect that we will learn effectively from our project experience so that future projects are more likely to be completed on time and on budget with all mission and safety objectives satisfied.

Path Forward. I want the OECM to begin needed revisions of the project management order in January 2006 and develop and issue this revision as a priority task during the upcoming year. I also want EH to review the existing safety directives and identify those that need to be revised to provide clear requirements regarding safety into early project phases. I do not expect line offices to await issuance of the revised order before they move forward on implementing the expectations I have described above. Other programs are requested to identify any specific implementation actions you will take to address the weaknesses and the expectations described above. Please provide a listing of your implementation actions and schedules by January 31, 2006, to Ms. Ingrid Kolb.

In closing, the Department has a solid foundation and is moving in the right direction in improving its project management practices. We need to make the needed improvements in effectively incorporating safety into design and construction so that we can reach our goal of world-class project management.

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