Department of Energy
Washington, DC 20585

October 31, 2005

The Honorable A. J. Eggenberger
Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, NW, Suite 700
Washington, DC 20004

Dear Mr. Chairman:

The purpose of this letter is to inform you that the Office of Environment, Safety and Health has completed Commitment 7A under Department's 2004-1 Implementation Plan, dated June 10, 2005, which identified the following deliverable: "Letter report to the Secretary declaring that adequate processes [for the new Office of Nuclear Safety Research] are in place and agreed upon and providing the basis for this declaration."

If you have any questions, please contact me or have your staff contact Tom Rollow at (202) 586-7449.

Sincerely,

for John Spitaleri Shaw
Assistant Secretary for
Environment, Safety and Health

cc: C. Sell, Deputy Secretary
D. Garman, Under Secretary for Energy, Science and Environment
L. Brooks, Under Secretary for National Nuclear Security Administration
B. Carnes, Director, Office of Management
M. Whitaker, Departmental Representative
T. Rollow, Office of Environment, Safety and Health

Enclosure

Department of Energy
Washington, DC 20585

2005-010931

October 24, 2005

MEMORANDUM TO THE SECRETARY

THROUGH: CLAY SELL
DEPUTY SECRETARY

FROM: JOHN SPITALERI SHAW
ASSISTANT SECRETARY FOR
ENVIRONMENT, SAFETY AND HEALTH

SUBJECT: **INFORMATION**: DOE'S 2004-1 IMPLEMENTATION PLAN, COMMITMENT 7A

The purpose for this memorandum is to confirm that the Office of Environment, Safety and Health has completed actions in fulfillment of Commitment 7A in the Department's 2004-1 Implementation Plan, dated June 10, 2005, in response to Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 2004-1. Commitment 7A required the following deliverable: "Letter report to the Secretary declaring that adequate processes [for the new Office of Nuclear Safety Research] are in place and agreed upon and providing the basis for this declaration." Included in this package is a letter to the DNFSB informing them of the completion of the commitment.

The Office of Nuclear Safety Research (ONSR) has taken several actions to fulfill Commitment 7A; specifically:

- Issued and published six procedures that guide its operations. The procedures are attached and can be found at ONSR website: http://www.eh.doe.gov/paa/nsr/procedures.html. These procedures are living documents that will be revised as necessary.

- Established the DOE Nuclear Safety Research Panel. In accordance with the Panel's charter (attached) the Panel will review and comment upon the above-referenced procedures. A list of the Panel members is attached. The first meeting of the panel will be held in November 2005 in Washington, DC.

- Conducted outreach meetings with DOE Program Offices, the National Nuclear Security Administration, and the DOE Office of Security and Safety Performance Assurance (SP) to inform them of the ONSR business plan and to solicit information and cooperation with the ONSR mission.

- Conducted a workshop to select a pilot research project. That pilot research project will be used to validate our procedures and processes.

Participants included subject matter experts from across the DOE complex as well as observers from the DNFSB and SP.

- Developed a staffing plan and Position Descriptions for three senior technical staff members who will assist in managing the ONSR program. These personnel actions are currently in the DOE Office of Human Capital Management and we are hopeful that they will be advertised and selected before the end of Calendar Year 2005. (In the meantime, technical staffers who are on detail to ONSR have been effective in keeping this program on schedule.)

All of the above actions were carefully designed to ensure that "adequate processes are in place." From the outset, ONSR has coordinated closely with the Central Technical Authorities and the Chiefs of Nuclear Safety for Energy, Science and Environment and National Nuclear Security Administration, and they have provided positive feedback on our actions. Thus, as required by Commitment 7A, these processes can be considered to be "agreed upon." In addition, we have kept the DNFSB staff informed of our progress, and we have received no adverse feedback.

If you have any questions, please contact me or have your staff contact Tom Rollow at (202) 586-7449.

Attachments

cc: D. Garman, Under Secretary for Energy, Science and Environment
L. Brooks, Under Secretary for National Nuclear Security Administration
M. Whitaker, Departmental Representative
B. Carnes, Director, Office of Management
T. Rollow, Office of Environment, Safety and Health
A. J. Eggenberger, Chairman, Defense Nuclear Facilities Safety Board

Office of Environment, Safety and Health	**Developing Work Authorization Statements and Contracts for Nuclear Safety Research**	Approved Date
EH-3x	**Standard Procedure**	EH-3x-SP-05 Rev 4

1. PURPOSE

This Standard Procedure specifies how the Office of Environment, Safety and Health, Office of Nuclear Safety Research (ONSR) will develop Work Authorization Statements to national laboratories, or contracts to private industry, to perform nuclear safety research.

The primary purpose of nuclear safety research is to directly benefit the Department. By contrast, the purpose of financial assistance awards (i.e., grants and cooperative agreements) is to carry out a public purpose of support or stimulation. ONSR will not likely use financial assistance awards and thus this procedure does not address those contracting instruments.

2. APPLICABILITY

This Standard Procedure applies to the Office of Nuclear Safety Research (ONSR). This Standard Procedure is maintained by the Deputy Assistant Secretary for Corporate Performance Assessment.

This Standard Procedure is a living document that will be revised as conditions change, and as experience shows ways to improve it. The Office of Nuclear Safety Research welcomes constructive comments on this procedure.

3. OBJECTIVES

For selected nuclear safety research needs and topics, ONSR will issue Work Authorization Statements under existing contracts to national laboratories, or award new contracts to private research organizations. This procedure outlines the process the ONSR staff should follow to ensure that the awards have clear statements of work, the best possible research organizations are selected, and awards are made in the most efficient and expedient manner.

4. RESPONSIBILITIES

4.1. The ONSR project managers:

- develop objectives, goals, and statements of work for proposed nuclear safety research projects
- develop criteria to evaluate proposals
- select the best research organization for the proposed research project
- work with the EH Contracting Officer Representative in developing Work Authorization Statements or other documents needed

4.2. Director of the Office of Nuclear Safety Research

- assigns project managers to nuclear safety research projects

- directs the overall development and management of nuclear safety research projects

4.3. Contracting Officer Representative from EH's Office of Planning and Administration
- works with ONSR project managers to ensure that research goals, objectives, requirements, and statements of work are well-defined
- assists ONSR project managers in developing and issuing requests for proposals, Work Authorization Statements, and other documents needed for developing research tasks for national laboratories and contracts

4.4. Contracting Officer in DOE field office
- incorporates a Work Authorization Statement for new nuclear safety research under an existing contract with associated national laboratory

4.5. Contracting Officer in ME's Procurement Services
- prepares requests for proposals for private industry
- negotiates and issues final contracts with private industry

5. REQUIREMENTS

5.1. Development of Goals, Objectives and Statements of Work

5.1.1. After a nuclear research topic is developed and selected to become a research project (see DOE Standard Procedure, EH-3x-SP-01, *Identification, Prioritization, and Approval of Nuclear Safety Research*), the Director of ONSR will assign a project manager for the project.

5.1.2. The project manager will develop goals, objectives, and an initial statement of work for the project. The statement of work will outline the objectives, methods and approaches, milestones and deliverables for the project, and should be compatible with its estimated cost and schedule. The project manager will establish requirements for monthly status reports, travel, briefings, draft and revision of final reports, and disposition of equipment, software, test specimens and other property after the project's completion.

5.2. Development and Issuance of Work Authorization Statements or Requests for Proposals

5.2.1. The ONSR project manager will work with a Contracting Officer Representative from EH's Office of Planning and Administration to develop Work Authorization Requests to national laboratories, or request for proposals to private industry.

5.2.2. In considering candidate research organizations, the project manager needs to identify organizations with experience and/or capabilities in doing the type of research wanted. Another factor for considering candidate research organizations is that it is often most efficient and expedient to "piggyback" on an existing research effort.

5.2.3. If a national laboratory appears best suited to perform the desired nuclear safety research, the project manager and Contracting Officer Representative will develop a Work Authorization Statement for the laboratory, incorporating a statement of work developed by the project manager. In cases where the best national laboratory is not obvious, a "lab call" may be used to solicit information from multiple national laboratories. In making lab calls, only the goals and objectives for the research are stated; a statement of work is not given.

5.2.4. If no national laboratory is best suited to perform the nuclear safety research, the project manager can develop a request for proposal to private industry. The request for proposal will include a statement of work and other requirements. Alternatively, a sole source private contractor could be selected if the appropriate requirements of the Competition in Contracting Act are met.

5.2.5. The decisions for selecting a specific national laboratory, developing a request for proposal, or using a sole source contract will be made in consultation the Deputy Assistant Secretary for the Corporate Performance Assessment before final actions are taken. All funding for ONSR's research projects must be approved by the Deputy Assistant Secretary.

5.2.6. The ONSR project manager and the Contracting Officer Representative will complete documentation required for the Work Authorization Statement to a national laboratory, or a request for proposal or sole source contract to private industry.

5.2.7. For a request for proposal to private industry, the ONSR project manager will develop, prior to soliciting research proposals, a set of criteria to evaluate the submitted proposals. The evaluation criteria should include the following, as appropriate; technical approach, synergy with ongoing research, past experience, qualifications of personnel, cost, and ability to adhere to the project schedule. The Director of ONSR and the Contracting Officer Representative will review and approve the evaluation criteria.

5.3. **Development and Issuance of Research Awards**

5.3.1. For nuclear safety research to be awarded to a national laboratory, the ONSR project manager will work with the national laboratory to finalize the statement of work. The project manager and Contracting Officer Representative will work with the field office for the selected national laboratory to incorporate the new Work Authorization Statement under the existing contract for the national laboratory.

5.3.2. For proposed research involving a request for proposal to private industry, the ONSR project manager will review the research proposals received and evaluate them against the evaluation criteria and recommend the selection of a research organization to a source selection official in ME.

5.3.3. For private industry research contracts, derived either from a request for proposal or sole source selection, the ONSR project manager, working with the Contracting Officer Representative and the developers of the proposals, will make whatever changes are required to meet the needs of the research, and to establish a final statement of work. Then a Contracting Officer in ME's Procurement Office will develop a contract with the selected private industry research organization.

5.3.4. After a Work Authorization Statement or contract is awarded, the ONSR project manager will manage it in accordance with DOE Standard Procedure, EH-3x-SP-03, *Managing Contracted Nuclear Safety Research Projects.*

6. REFERENCES

DOE *Implementation Plan to Improve Oversight of Nuclear Operations (in response to Defense Nuclear Facilities Safety Board Recommendation 2004-1),* Rev. 1, June 2005

DOE Standard Procedure, EH-3x-SP-01, *Identification, Prioritization, and Approval of Nuclear Safety Research*

DOE Standard Procedure, EH-3x-SP-03, *Managing Contracted Nuclear Safety Research Projects*

7. DEFINITIONS

None.

8. ATTACHMENTS

None.

Office of Environment, Safety and Health	**Disseminating Nuclear Safety Research Results**	Approved Date
EH-3x	**Standard Procedure**	EH-3x-SP-04 Rev 2

1. PURPOSE

This Standard Procedure specifies how the Office of Environment, Safety and Health (EH) will disseminate nuclear safety research results.

2. APPLICABILITY

This Standard Procedure applies to the Office of Nuclear Safety Research (ONSR). This Standard Procedure is maintained by the Deputy Assistant Secretary for Corporate Performance Assessment.

This Standard Procedure is a living document that will be revised as conditions change, and as experience shows ways to improve it. The Office of Nuclear Safety Research welcomes constructive comments on this procedure.

3. OBJECTIVES

ONSR will disseminate the results of nuclear safety research to those in the Department who can benefit from this information. Research results include both research sponsored by ONSR as well as research performed by entities external to DOE. A key part of the target audience will be those who identified needs for the research, and the designated reviewers for the research. Others in the target audience may include DOE nuclear facility operators, designers, and policy-makers. ONSR will also make nuclear safety research results and information available to the general public through its website.

4. RESPONSIBILITIES

4.1. The ONSR project managers:

- establish lists of reviewers and target audiences for each nuclear safety research project
- "push" preliminary results to reviewers and final research reports to the target audiences
- ensure that final research reports and cataloged research are posted on the office's website.

4.2. Director of the Office of Nuclear Safety Research

- directs the overall management of nuclear safety research projects
- directs the development of the annual report of research projects and the quarterly journal
- directs the establishment and updating of the office's website

5. REQUIREMENTS

5.1. Determining the target audience for nuclear safety research results.

5.1.1. For each research topic, a key part of the target audience will be those who identified needs for the research, the established points of contacts within the two Central Technical Authorities and with nuclear line organizations (NA, EM, SC, NE and RW), and members of the Nuclear Safety Research Review Panel. The process for identifying research needs is covered by DOE Standard Procedure, EH-3x-SP-01.

5.1.2. ONSR project managers responsible for projects will develop a target audience list of the above, plus others who might benefit from the projects results. This target audience could include DOE nuclear facility operators, designers, and policy-makers. In cases where cooperation with other agencies has been established for the research, the target audience would include key contacts from those agencies. Project managers will accommodate other requests for final research reports by adding people to the target audience list.

5.2. Disseminating nuclear safety research information to reviewers and target audiences

5.2.1. While managing contracted or in-house nuclear safety research, ONSR project managers will provide status reports and interim result information to those reviewing the projects, as detailed in DOE Standard Procedures EH-3x-SP-03.

5.2.2. When research is completed and final reports are issued, the ONSR project managers will "push" copies of the final reports (either electronic or hardcopy) to the target audience for the research. In some cases, e-mail or list-server notifications of new website posting of the final reports will suffice.

5.2.3. ONSR staff responsible for surveying and cataloging nuclear safety research conducted outside of ONSR will "push" new cataloged research information to target audiences for the specific research topics.

5.3. Disseminating nuclear safety research information to the general public

5.3.1. ONSR will make information about contracted, in-house, and cataloged nuclear safety research available to the general public (as well as stakeholders) through a public access website. ONSR will ensure that sensitive material is not made public.

5.3.2. The ONSR website will post final reports of contracted and in-house nuclear safety research, along with cataloged information on nuclear safety research conducted outside of ONSR. The website will also post ONSR procedures and the following ONSR periodic reports:

- Annual report of the research projects and activities of the Office of Nuclear Safety Research. The purpose of the report is to publish what nuclear safety research results are available from the previous year, and to document the contribution of nuclear safety research to DOE's safety posture.

- A quarterly journal of several technical papers on the results of nuclear safety research. These technical papers would, for the most part, be authored by the researchers themselves and not the ONSR staff.

6. REFERENCES

DOE *Implementation Plan to Improve Oversight of Nuclear Operations (in response to Defense Nuclear Facilities Safety Board Recommendation 2004-1),* Rev. 1, June 2005

DOE Standard Procedure, EH-3x-SP-01, *Identification, Prioritization, and Approval of Nuclear Safety Research*

DOE Standard Procedure, EH-3x-SP-02, *Surveying and Cataloging Nuclear Safety Research*

DOE Standard Procedure, EH-3x-SP-03, *Managing Contracted Nuclear Safety Research Projects*

7. DEFINITIONS

None.

8. ATTACHMENTS

None.

Office of Environment, Safety and Health	**Managing Contracted Nuclear Safety Research Projects**	Approved 9/13/05 Date
EH-3x	**Standard Procedure**	EH-3x-SP-03 Rev 4

1. PURPOSE

This Standard Procedure specifies how the Office of Environment, Safety and Health (EH) will manage nuclear safety research projects awarded through contracts, cooperative agreements, and grants.

2. APPLICABILITY

This Standard Procedure applies to the Office of Nuclear Safety Research (ONSR). This Standard Procedure is maintained by the Deputy Assistant Secretary for Corporate Performance Assessment.

This Standard Procedure is a living document that will be revised as conditions change, and as experience shows ways to improve it. The Office of Nuclear Safety Research welcomes constructive comments on this procedure.

3. OBJECTIVES

ONSR will manage contracted nuclear safety research projects in accordance with the steps of this procedure. The objectives for managing research are to:

- ensure that the contractors or grant recipients fulfill the requirements of their contracts and grants, including the preparation, review, and final completion of project data and reports
- monitor the progress of the research to keep research customers apprised of schedules and expected outcomes
- identify and address problems and potential delays in a timely manner
- ensure that research methodologies and results are peer reviewed and presented with enough detail to ensure that current and potential future users have sufficient bases for changes to practices and policy
- ensure that DOE controls the disposition of all data, software programs and equipment at the completion of the projects
- ensure nuclear safety research is responsive to customer needs

4. RESPONSIBILITIES

4.1. The ONSR project managers:

- ensure that the contracts or grants have sufficient detail, so that expectations are well-understood
- monitor the progress of projects and disseminate status information
- identify project problems and propose resolutions
- establish and direct peer review of project methodologies and results

- close out projects, ensuring publication of final reports and disposition of equipment, software and data
- routinely communicate with customers and researchers

4.2. Director of the Office of Nuclear Safety Research

- directs the overall management of nuclear safety research projects
- reviews and approves, in consultation with the DAS for Corporate Performance Assessment, project redirections needed to address problems
- directs the overall dissemination of information on the progress and results of nuclear safety research projects
- routinely communicates with external stakeholders (e.g., DNFSB) to solicit feedback

5. REQUIREMENTS

5.1. Monitoring the progress of nuclear safety research projects

5.1.1. Contracts, cooperative agreements, and grants should be developed with schedules, deliverables, and the requirement for written monthly progress reports that detail achievements, costs, and near-term planning.

5.1.2. ONSR project managers will establish peer reviews for each project, tailoring the selection of recognized technical expert reviewers for each project. In some cases, the peer reviewers may review project methodologies and approaches before testing or analysis begins. When appropriate, the funding for peer reviews will be written into the contracts or grants.

5.1.3. ONSR project managers will monitor the progress of their projects, both through the contractor's monthly progress reports and through private communications. The frequency of private communications should be at least weekly, and more often as major milestones (e.g., tests, report preparation) are being approached and conducted.

5.1.4. ONSR project managers will routinely disseminate information on the progress of research projects during internal weekly staff meetings, to customers of the research who request such information, and to others as appropriate. Project managers will report major project accomplishments or problems to the ONSR Director as soon as they occur.

5.1.5. ONSR project managers will prepare presentations and briefing material on the progress of the projects for which they are responsible, for the following:

- annual nuclear safety research report
- quarterly journal on the results of nuclear safety research
- meetings of the Nuclear Safety Research Review Panel
- ad hoc briefings to the Chief Technical Authorities (CTAs), Chiefs of Nuclear Safety, the Defense Nuclear Facility Safety Board, line organizations, and other organizations and agencies

5.2. Addressing problems and redirecting projects

5.2.1. Technical and managerial problems with projects should be clearly identified in a timely fashion through the monitoring discussed above.
5.2.2. ONSR project managers will work with the researchers to develop proposed resolutions to the problems, including alternative approaches and methodologies, rescheduling, scope changes, budget redirection and cancellation of the projects.
5.2.3. The DAS for Corporate Performance Assessment must approve significant project redirections before they are implemented.
5.2.4. ONSR will inform the Nuclear Safety Research Review Panel, the Chief Technical Authorities, Chiefs of Nuclear Safety, and line organizations of proposed major changes in the scope, schedule or budget of projects

5.3. **Completing projects**

5.3.1. Contracts, cooperative agreements, and grants should be written to ensure that sufficient funds will be available (perhaps allocated separately) to close out projects, including the review and issuance of the final project report.
5.3.2. ONSR project managers will individually review project data and draft project reports, and submit these for peer review. The project managers will compile comments and suggestions from these reviews and submit them for resolution.
5.3.3. ONSR project managers and the Director of ONSR must approve the final drafts of project reports before they are published and disseminated.
5.3.4. As part of the project close-out, ONSR project managers will direct the disposition of hardware, software, test equipment and interim analysis or test data that were purchased for, or developed during each project. Planning and funding for this disposition should be part of the contract or grant for each project.

6. REFERENCES

DOE *Implementation Plan to Improve Oversight of Nuclear Operations (in response to Defense Nuclear Facilities Safety Board Recommendation 2004-1),* Rev. 1, June 2005

DOE Standard Procedure, EH-3x-SP-01, *Identification, Prioritization, and Approval of Nuclear Safety Research*
DOE Standard Procedure, EH-3x-SP-02, *Surveying and Cataloging Nuclear Safety Research*
DOE Standard Procedure, EH-3x-SP-04, *Disseminating Nuclear Safety Research Results*

7. DEFINITIONS

None.

8. ATTACHMENTS

None.

Office of Environment, Safety and Health	**Surveying and Cataloging Nuclear Safety Research**	Approved Date
EH-3x	**Standard Procedure**	EH-3x-SP-02 Rev 4

1. PURPOSE

This Standard Procedure specifies how the Office of Environment, Safety and Health (EH) will survey nuclear safety research performed or being performed outside of the Office of Nuclear Safety Research (including outside of the Department of Energy), and catalog useful information from such research.

2. APPLICABILITY

This Standard Procedure applies to the Office of Nuclear Safety Research (ONSR). This Standard Procedure is maintained by the Deputy Assistant Secretary for Corporate Performance Assessment.

This Standard Procedure is a living document that will be revised as conditions change, and as experience shows ways to improve it. ONSR welcomes constructive comments on this procedure.

3. OBJECTIVES

The process established by this Standard Procedure will identify and catalog nuclear safety research conducted outside of ONSR that could have Department-wide applications. Nuclear safety research conducted or funded by ONSR will be disseminated in accordance with EH-3x – SP-04. The objectives of this effort are to:

- make information about nuclear safety research readily available to DOE organizations
- improve the planning of nuclear safety research to be conducted by ONSR through knowledge of similar past and ongoing research
- ensure that there is no duplication of nuclear safety research to be conducted by ONSR

4. RESPONSIBILITIES

4.1. The ONSR staff

- Establishes and maintains points of contact for nuclear safety research conducted by the Department's nuclear line organizations (NA, EM, SC, NE and RW) and outside agencies (e.g., the NRC, DNFSB, NEI, EPRI, IAEA, and UK-NII).
- Identifies, compiles, and catalogs past, ongoing and future nuclear safety research conducted by those organizations.
- Disseminates this information, and applies it to the research prioritization and planning process.

4.2. Director of the Office of Nuclear Safety Research

- Directs the surveying and cataloging of nuclear safety research conducted by the Department's nuclear line organizations and outside agencies.

- Establishes and implements a communication plan through which other organizations are made aware of how the office's research relates to nuclear safety research conducted elsewhere.
- Directs the development of the annual nuclear safety research plan, which may discuss research conducted outside the office.

5. REQUIREMENTS

5.1. Surveying Nuclear Safety Research Conducted Outside of ONSR

5.1.1. Surveys of nuclear safety research limit the research information to be gathered by the following criteria:

- No classified material will be collected.
- The research must address nuclear safety issues relevant to DOE, rather than research focused towards improving production, weapon design, etc., or general safety issues with little nuclear safety impact (e.g., OSHA compliance).
- Priority will be given to:
  - recent and ongoing research, rather than old research
  - research addressing issues related to potential high-consequence (low-probability) nuclear accidents
  - research having the potential to impact many of DOE nuclear operations and facilities
  - research offering complete results and methodologies, rather than research that will be fully shared only through additional costs to DOE.

5.1.2. ONSR will establish points of contacts within the Department's nuclear line organizations (NA, EM, SC, NE and RW) and identify past, ongoing and future nuclear safety research conducted by those organizations. The ONSR staff will track the progress of this research, and the points of contact will provide information on plans and results of this research, preferably in electronic form that can be posted on the ONSR website.

5.1.3. ONSR will establish points of contacts within nuclear safety research organizations outside of the Department, such as the US Nuclear Regulatory Commission (NRC), the Defense Nuclear Facilities Safety Board (DNFSB), the Nuclear Energy Institute (NEI), the Electric Power Research Institute (EPRI), the International Atomic Energy Agency (IAEA), and the United Kingdom Nuclear Installation Inspectorate (UK-NII). Through these contacts, the ONSR staff will identify past, ongoing and future nuclear safety research conducted by those organizations. The ONSR staff will track the progress of this research, and the points of contact will provide information on plans and results of this research, preferably in electronic form that can be posted on the ONSR website.

5.2. Cataloging Nuclear Safety Research Outside of ONSR

5.2.1. The ONSR staff will compile and catalog information on nuclear safety research gathered from the surveys discussed above. The staff will note the extent to which research methods and results are available to DOE, and where additional expense or cooperation with the research organizations are required to obtain fuller results and research information.

5.2.2. When appropriate, the ONSR staff will post (or link) on the ONSR website electronic versions of information about nuclear safety research conducted by outside organizations.

5.2.3. When evaluating and prioritizing nuclear safety research needs, the EH-3 staff will correlate these needs with the catalog of nuclear safety research to ensure that new research is really needed, or to identify opportunities to capitalize on similar research already performed.

6. REFERENCES

DOE *Implementation Plan to Improve Oversight of Nuclear Operations (in response to Defense Nuclear Facilities Safety Board Recommendation 2004-1),* Rev. 1, June 2005

DOE Standard Procedure, EH-3x-SP-01, *Identification, Prioritization, and Approval of Nuclear Safety Research*
DOE Standard Procedure, EH-3x-SP-03, *Managing Contracted Nuclear Safety Research Projects*
DOE Standard Procedure, EH-3x, SP-04, *Disseminating Nuclear Safety Research Results*

7. DEFINITIONS

None.

8. ATTACHMENTS

Form for cataloging nuclear safety research conducted outside the Office of Nuclear Safety Research.

Attachment to EH-3x-SP-02

Nuclear Safety Research Conducted Outside of ONSR

Title

Organization

Summary of Research (include objectives, methodology, key results, and major conclusions)

Dates Conducted

Products of Research

Costs

Related Research

Keywords

Relevance to DOE operations

Office of Environment, Safety and Health	**Identification, Prioritization, and Approval of Nuclear Safety Research**	Approved Date
EH-3x	**Standard Procedure**	EH-3x-SP-01 Rev 7

1. PURPOSE

This Standard Procedure specifies how the Office of Environment, Safety and Health (EH) solicits, identifies, and prioritizes proposals for nuclear safety research, and how the proposals become finalized and approved in an annual nuclear safety research plan.

2. APPLICABILITY

This Standard Procedure applies to all Office of Environment, Safety and Health personnel involved in developing or approving nuclear safety research. This EH-Wide Standard Procedure is maintained by the Deputy Assistant Secretary for Corporate Performance Assessment.

This Standard Procedure is a living document that will be revised as conditions change, and as experience shows ways to improve it. EH welcomes constructive comments on this procedure.

3. OBJECTIVES

The Office of Environment, Safety and Health (EH) is responsible for the Department's corporate nuclear safety research function. Within EH, the Office of Nuclear Safety Research (ONSR) must:

- Integrate for DOE nuclear safety research being performed inside and outside of DOE.
- Prepare an Annual DOE Nuclear Safety Research Plan
- Obtain independent, informed advice on both the activities of the Office of Nuclear Safety Research as well as the prioritization of nuclear safety research projects.
- Plan, contract, direct or conduct nuclear safety analysis and testing.
- Disseminate the results of nuclear safety research to DOE nuclear facility operators, designers, and policy-makers to effect improvement in margins of safety.
- Publish results.
- Provide robust program management of the nuclear safety research function.

The objective of this Standard Procedure is to specify how the EH Office of Nuclear Safety Research, with help from others, will identify, prioritize and approve nuclear safety research.

4. RESPONSIBILITIES

4.1. Research program managers within the Office of Nuclear Safety Research

- Establish and maintain points of contact for nuclear safety research within the line organizations, the NA and ESE Central Technical Authorities, DOE technical committees, EFCOG, NLIC, DNFSB, the NRC and other federal and international agencies.

- Solicit points of contacts for nuclear safety research needs and suggested research projects, plus information on nuclear safety research conducted by organizations and agencies outside of the Office of Nuclear Safety Research.
- Participate in an initial prioritization of suggested research projects.
- Develop informational scoping packages for each identified safety research issue/need/problem.
- Develop parts of the annual nuclear safety research plan for specific projects.

4.2. Director of the Office of Nuclear Safety Research

- Directs nuclear safety research solicitation, prioritization and the development of informational scoping packages.
- Establishes and maintains a Nuclear Safety Research Review Panel.
- Directs the development of the annual nuclear safety research plan.
- Facilitates reviews, concurrences, approvals and resolution of differences in the process of identifying and prioritizing nuclear safety research.
- Routinely communicates to and solicits feedback from external stakeholders (e.g., the DNFSB).

4.3. The Office of Analytical Studies (EH-32) identifies generic nuclear safety research needs that come from its routine analysis of operating experience, and forwards these to the Office of Nuclear Safety Research.

4.4. The Office of Authorization Basis (EH-23) identifies generic nuclear safety research needs that come from its routine analysis of Unreviewed Safety Questions and safety analysis reports, and forwards these to the Office of Nuclear Safety Research.

4.5. Other EH offices identify nuclear safety needs, as appropriate, and forward these to the Office of Nuclear Safety Research.

4.6. EH Deputy Assistant Secretary (DAS) for Corporate Performance Assessment (EH-3)

- Reviews and approves nuclear safety research informational packages and prioritizations made by both the Office of Nuclear Safety Research staff and the Nuclear Safety Research Committee/Panel, resolves any differences in priority rankings, and provides any additional direction.
- Concurs on the annual nuclear safety research plan, and interfaces with the NA and ESE Central Technical Authorities to obtain their concurrence on the plan.

4.7. NA and ESE Central Technical Authorities (CTAs)

- Participate in the identification of nuclear safety research needs and suggest potential research projects.
- Concur on the annual nuclear safety research plan.

4.8. The Assistant Secretary for the Office of Environment, Safety and Health approves the annual nuclear safety research plan, including the proposed budget for the research.

5. REQUIREMENTS

5.1. Identification of Nuclear Research Safety Needs and Potential Research Topics

5.1.1. The Office of Nuclear Safety Research will establish points of contacts within the two Central Technical Authorities and with nuclear line organizations (NA, EM, SC, NE and RW) and periodically solicit these contacts for generic nuclear safety needs and suggestions for potential research topics. These generic needs must be applicable to several operations within the Department, rather than limited to a single or few specific projects within the line organizations.

5.1.2. Through its contacts with the nuclear line organizations, the Office of Nuclear Safety Research will also identify, compile and catalog nuclear safety research projects planned or already completed by the line organizations that could be used directly or modified for generic application.

5.1.3. The Office of Nuclear Safety Research will establish contacts with internal Departmental expert organizations, such as the Criticality Safety Support Group and the Fire Safety Committee, and will periodically solicit these contacts for generic nuclear safety needs and suggestions for potential research topics.

5.1.4. The Office of Nuclear Safety Research will establish contacts with contractor groups, such as EFCOG (Energy Facilities Contractors Group) and NLIC (National Laboratory Improvement Council), and will periodically solicit these contacts for generic nuclear safety needs and suggestions for potential research topics.

5.1.5. The Office of Nuclear Safety Research will establish contact with the DNFSB and routinely solicit feedback on issues, plans and products.

5.1.6. The Office of Nuclear Safety Research will solicit information on nuclear safety research planned or being conducted by others such as the US Nuclear Regulatory Commission and other federal agencies, international agencies, the Electric Power Research Institute (EPRI), and the Institute of Nuclear Power Operations (INPO). The office will periodically solicit these contacts for generic nuclear safety needs and suggestions for potential research topics.

5.1.7. In its systematic reviews of operating experience, the Office of Analytical Studies (EH-32) will identify generic nuclear safety research needs and relay these to the Office of Nuclear Safety Research.

5.1.8. In its periodic review of Unreviewed Safety Questions (USQs) and safety analysis reports, the Office of Authorization Basis (EH-23) will identify generic nuclear safety research needs and relay these needs to the Office of Nuclear Safety Research.

5.1.9. From all the input gathered above, the Office of Nuclear Safety Research will prepare lists of identified nuclear safety needs and proposed projects, including rough estimates of costs and schedules.

5.2. Prioritization of Nuclear Safety Research Projects

5.2.1. In finalizing lists of potential research projects for prioritization, the following criteria will be used to cull out non-applicable projects:

- Research topics must be limited to those addressing nuclear safety for DOE operations and facilities.

- The topics must have a demonstrated potential to:
  - improve nuclear safety practices (through applied research and development), or
  - reduce uncertainties in current nuclear safety analyses, or
  - identify or clarify new hazards, accident scenarios and risks, and
  - justify changes to practices and directives that will better address the new risk perspectives gained.

- Research must not repeat previous or ongoing research done by DOE line organizations or other agencies, unless there is a strong demonstrated need to validate, verify or extend such research.

5.2.2. The prioritization process for proposed nuclear safety research is intended to select and approve a set of research projects for each upcoming fiscal year, given expressed needs and total annual budgets for the research. The goal is to produce a prioritized and well-vetted list of projects that can be further developed into an annual nuclear safety research plan. This process will take several steps, as outlined below. Prioritization will be based on both the potential applicability of the research results plus the likely success of the projects. The following criteria will be used in the prioritization process:

- Preference will be given toward nuclear safety research projects that address:
  - current or near-future operations
  - potential high-consequence (low-probability) nuclear accidents
  - generic issues that impact many of DOE's nuclear operations and facilities
  - technical questions that can be addressed by testing or analysis

  Exceptions to the above could be made for certain high-profile nuclear safety issues demanding immediate attention.

- Preference will be given to nuclear safety research projects that have:
  - low potential cost/benefit ratios
  - high likelihood of successful completion (demonstrated by success of previous similar work, expertise and experience of researchers, etc.)
  - capability of producing defensible results that can withstand peer review and challenges by organizations with opposing interests.

5.2.3. The Office of Nuclear Safety Research will perform an initial prioritization of suggested research projects, and develop informational scoping packages for each identified safety research issue/need/problem. Each informational package will

fully describe: the safety issue/problem to be studied; the possible research envisioned to address the issue; the expected schedule to complete the task; the expected cost to perform the research task; and, the expected benefit to DOE for conducting the research and resolving the safety issue.

5.2.4. A Nuclear Safety Research Review Panel established by the Office of Nuclear Safety Research will meet periodically to review, concur, and/or comment on the prioritization of potential research projects performed by the Office of Nuclear Safety Research staff. The Committee/Panel will formalize its recommendations in its meeting minutes.

5.2.5. The Office of Nuclear Safety Research will incorporate or resolve panel comments.

5.3. **Development and Approval of Annual Nuclear Safety Research Plan**

5.3.1. Based on the prioritization of research projects noted above, the Office of Nuclear Safety Research will draft an annual nuclear safety research plan for the upcoming year.

5.3.2. The Office of Nuclear Safety Research will obtain both the NA and ESE Central Technical Authorities (CTA) comments and concurrence on the plan.

5.3.3. Upon concurrence by the CTAs, the Assistant Secretary for the Office of Environment, Safety and Health will approve the annual nuclear safety research plan, including the proposed budget for the research.

6. **REFERENCES**

DOE *Implementation Plan to Improve Oversight of Nuclear Operations (in response to Defense Nuclear Facilities Safety Board Recommendation 2004-1),* Rev. 1, June 2005

DOE Standard Procedure, EH-3x-SP-02, *Surveying and Cataloging Nuclear Safety Research*
DOE Standard Procedure, EH-3x-SP-03, *Managing Contracted Nuclear Safety Research Projects*
DOE Standard Procedure, EH-3x-SP-04, *Disseminating Nuclear Safety Research Results*

7. **DEFINITIONS**

None.

8. **ATTACHMENTS**

Research request form for recommending nuclear safety issues and research to the Office of Nuclear Safety Research.

Attachment to EH-3x-SP-01

Nuclear Safety Research Request Form – for submission to the DOE/EH Office of Nuclear Safety Research.

Topic (or title) of nuclear safety research:

Recommender of research (name and organization):

Nuclear safety issue:

Applicability of issue (estimate range of DOE nuclear operations and facilities to which the issue applies):

Significance and characterization of issue (For example: Does issue concern potential high-consequence accidents? New hazards not currently evaluated correctly? Does it reduce uncertainties in known accident scenarios?):

Proposed scope of research to address issue:

Expected results from research (Testing and/or analyses? How many tests? Methodology development? New/modified software?)

Previous research (if any) that proposed research is based on, or will be similar to:

Estimated schedule for completion of research:

Estimated cost of research:

Office of Environment, Safety and Health	**Business Practices for the Office of Nuclear Safety Research**	Approved 9/26/05 Date
EH-3x	**Standard Procedure**	EH-3x-SP-06 Rev 1

1. PURPOSE

This Standard Procedure specifies how the Office of Environment, Safety and Health, Office of Nuclear Safety Research (ONSR) will conduct its business, specifically program management and financial management.

2. APPLICABILITY

This Standard Procedure applies to the Office of Nuclear Safety Research (ONSR). This Standard Procedure is maintained by the Deputy Assistant Secretary for Corporate Performance Assessment.

This Standard Procedure is a living document that will be revised as conditions change, and as experience shows ways to improve it. The Office of Nuclear Safety Research welcomes constructive comments on this procedure.

3. OBJECTIVES

Consistent with the President's Management Agenda and to provide good stewardship of the taxpayers' money, the Office of Nuclear Safety Research will provide robust program management of the nuclear safety research function. This procedure outlines the process the ONSR staff should follow to ensure that there is clear strategic direction for the program, that a set of metrics measuring all aspects of the research life cycle are established and tracked, that all financial aspects of the office are carefully monitored, and that results can be demonstrated for the investments.

4. RESPONSIBILITIES

4.1. ONSR Program Analyst:

- Collects and analyzes metrics to ensure that short term goals are being met.
- Works with the EH Office of Planning and Administration to produce a periodic report tracking financial obligations and invoice payments.
- Works with project managers to produce a periodic value report showing what the Government got for its money.

4.2. ONSR Project Managers:

- Collaborate and coordinate with offices in other programs performing nuclear safety research to ensure that all offices share similar goals and objectives.
- Assist the Director in producing an Annual Nuclear Safety Research Plan and an Annual Nuclear Safety Research Report.

- Prepare, maintain, use and update as necessary, procedures for performing office tasks.
- Ensure that contract documents are prepared in such a way as to hold contractors accountable for cost, schedule and results of research.

4.3. Director of the Office of Nuclear Safety Research

- Provide strategic direction for the office.
- Produce an Annual Nuclear Safety Research Plan and an Annual Nuclear Safety Research Report.
- Lead the office in an annual self-assessment of the office.
- Arrange for an annual independent assessment of the office.

4.4. Budget Specialist from EH's Office of Planning and Administration

- Work with program analyst to produce a periodic report tracking financial obligations and invoice payments

5. REQUIREMENTS

5.1. Strategic Planning

5.1.1. The ONSR Director will provide strategic direction to the office. Strategic direction will clearly link to the strategic goals of EH and the Department. Such strategic direction shall include long term (multi-year) goals as well as short term (annual) goals that demonstrate progress toward achieving the long term goals.

5.1.2. Project managers and the program analyst will collaborate and coordinate with offices in other programs performing nuclear safety research to ensure that all offices share similar goals and objectives for nuclear safety research.

5.1.3. The ONSR Director, assisted by project managers, shall produce an Annual Nuclear Safety Research Plan outlining the research goals for the year, and an Annual Nuclear Safety Research Report outlining the program's accomplishments for the past year.

5.2. Program Management

5.2.1. **Metrics.** The program analyst shall collect and analyze metrics monthly to ensure that short term goals are being met. Example metrics are shown in Attachment 1.

5.2.2. **Procedures.** Project managers shall prepare, maintain, use and update as necessary, procedures for performing office tasks. An initial list of required procedures is included as Attachment 2.

5.2.3. **Financial tracking.** The program analyst shall work with the budget specialist from the EH Office of Planning and Administration to produce a monthly report tracking financial obligations and invoice payments. This report will demonstrate that funds are obligated in a timely manner, spent on the intended purpose, and invoiced promptly.

5.2.4. **Value.** The program analyst shall work with project managers to produce a simple monthly report showing what the Government got for its money. This is simply a tabulation of funds expended over the past month and a narrative description of what work was accomplished with those funds.

5.2.5. **Accountability.** Project managers shall ensure that contract documents (scopes of work, task orders, etc.) are prepared in such a way as to hold contractors accountable for cost, schedule and results. Techniques to use may include interim payments once specified milestones are achieved, and other performance-based incentives.

5.2.6. **Annual review.**

5.2.6.1. **Self assessment.** Annually, the ONSR Director shall lead the members of the office in a self-assessment activity to evaluate whether the program being run effectively, steady progress is being made toward achieving goals, and whether changes in process are needed. Stakeholders may be invited to participate in this self-assessment.

5.2.6.2. **Independent assessment.** Annually, the ONSR Director shall arrange for an independent assessment of the office and program. This can be accomplished by inviting or contracting with persons outside the program to perform the assessment. It may also be satisfied by an independent review performed for another reason such as an Oversight Assessment by the Office of Performance Assurance.

6. REFERENCES

DOE *Implementation Plan to Improve Oversight of Nuclear Operations (in response to Defense Nuclear Facilities Safety Board Recommendation 2004-1),* Rev. 1, June 2005

7. DEFINITIONS

None.

8. ATTACHMENTS

1. Example Metrics
2. List of Office of Nuclear Safety Research Procedures

Attachment 1 – Example Metrics

The following are general categories of metrics that may be applied to the Office of Nuclear Safety Research and the Nuclear Safety Research Program. The list is intended to be generic and not all-inclusive. Specific metrics, short term goals, and long term goals will be developed as called for in the procedure and published separately.

Example metrics:

- Milestones – These are generally dates by when an action must be taken. These metrics are usually associated with the startup of a program or process. For example, "ensure that adequate processes are in place and agreed upon by October 31, 2005".
- Time – Time to accomplish a specific action or event. If time is of the essence, challenging but achievable time limits may be applied to keep the program aggressively moving forward. For example, "within 30 days of receipt of Lab bids for performing a research project, select and award the winning bid".
- Culture – Difficult to measure, but reinvigorating an organization's processes, such as nuclear safety research, might be judged by a change in culture, actions, or policies of the organization. For example, "nuclear safety research is not only utilized, but programs actually seek out research as they embark on new design projects or major modifications to existing projects".
- Safety Margins – One result of successful nuclear safety research is to improve safety margins.
- Cost – Another result of successful nuclear safety research is reduced cost. This may include reduced costs due to avoiding accidents, due to avoiding time shut down for safety reasons, due to standardization across all DOE programs, and/or due to removing safety uncertainties from design or operation.

Attachment 2 – List of Office of Nuclear Safety Procedures

The initial set of procedures for the Office of Nuclear Safety Research shall include:

- Identification, Prioritization, and Approval of Nuclear Safety Research
- Surveying and Cataloging Nuclear Safety Research
- Managing Contracted Nuclear Safety Research Projects
- Disseminating Nuclear Safety Research Results
- Developing Work Authorization Statements and Contracts for Nuclear Safety Research
- Business Practices for the Office of Nuclear Safety Research

Nuclear Safety Research Review Panel

October 2005

Frank R. McCoy, III*/	**Washington Safety Management Solutions**
Kelly Beierschmitt, Ph.D.	**Oak Ridge National Laboratory**
Kevin Carroll	**Oak Ridge Y-12**
Richard S. Hartley, Ph.D.	**BWXT Pantex**
Richard H. Lagdon, Jr.	**Chief of Nuclear Safety for Energy, Science and Environment**
James McConnell	**Chief of Defense Nuclear Safety National Nuclear Security Administration**

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*/ **Panel Chair**

NUCLEAR SAFETY RESEARCH REVIEW PANEL

CHARTER

I. Purpose

The Department of Energy (DOE) Nuclear Safety Research Review Panel (NSRRP) is established to review the DOE Nuclear Safety Research program under the purview of the DOE Office of Environment, Safety and Health, to provide guidance on ways and means to improve the effectiveness of the program, and to assist in prioritizing nuclear safety research projects.

II. Responsibilities

At the request of the Assistant Secretary for Environment, Safety and Health, the NSRRP shall:

1. **Provide technical and managerial expertise in the evaluation of the Nuclear Safety Research Program under the purview of the Office of Environment, Safety and Health, and make recommendations on needed program improvements.**

2. **Provide technical and managerial expertise in the evaluation and prioritization of DOE nuclear safety research projects under the purview of the Office of Environment, Safety and Health.**

3. **Review and provide comment on the Nuclear Safety Research Program Plan and Annual Report.**

III. Membership

- **Membership in the DOE NSRRP shall be limited to DOE and other Federal agency employees and to employees of DOE management and operating or management and integration contractors reviewing or advising on matters related to their contract, selected with a view toward establishing a panel that shall be comprised of a cross-section of the DOE research and operations community. Representatives might include: (1) the Chiefs of Nuclear Safety from the Under Secretary for Energy, Science and Environment, and from the National Nuclear Security Administration, (2) one or more representatives from the National Laboratories (perhaps nominated by the National Laboratory Improvement Council), and (3) one or more representatives from DOE Management and Operating contractors (perhaps nominated by the Energy Facilities Contractor Group).**

- **With the exception of employees of the National Nuclear Security Administration and its contractors, panel members shall serve at the invitation of the Assistant Secretary for Environment, Safety and Health for two years, and their appointments shall be renewable upon approval by the Assistant Secretary for Environment, Safety and Health. Panel Members who are employees of the National Nuclear Security Administration or its contractors, will be appointed by the Administrator for Nuclear Security after coordinating with the Assistant Secretary for Environment, Safety and Health. Such members shall serve for two years, and their appointment may be renewed.**

- **The panel shall provide its recommendations to the Assistant Secretary for Environment, Safety and Health.**

IV. Procedures

- **The Assistant Secretary for Environment, Safety and Health or such official's designee shall chair the panel.**

- **Administrative support for the panel shall be provided by the Office of Nuclear Safety Research.**

- **The panel shall meet approximately four times per year at an appropriate location for the purpose of discussing nuclear safety research issues and related matters and concerns.**

- **Only panel members shall vote on recommendations. Additional DOE and contractor personnel are invited and encouraged to participate in panel meetings and activities.**