

Question and Response Report

for:

Module 03: Responsibilities and functions of the Regulatory Body

IRRS Question and Response Report

Question No: 013

Module 03: Responsibilities and functions of the Regulatory Body

Question

How does the Regulatory Body maintain its independence in its reporting line in the governmental infrastructure?

Response

On health and safety issues, the U.S. Nuclear Regulatory Commission (NRC) answers to no other part of the Executive Branch of the U.S. Government. Of course, it must answer to the U.S. Congress and the Federal courts, but its safety decisions are not reviewed by any other agency of the Executive Branch. In particular, they are not reviewed by the U.S. Department of Energy, which has responsibility for promoting nuclear power. This separation between regulation and promotion was established by the Energy Reorganization Act of 1974 (ERA), which established the NRC. Even Congress and the Federal courts generally defer to the agency's safety judgment.

Nonetheless, the Office of Management and Budget (OMB), which is within the Executive Office of the President, has statutory authority to review certain NRC actions, in particular its budget proposals and the paperwork demands the NRC imposes on regulated entities. Thus, while the President cannot overrule the agency's safety judgment, he does have some control over its resources and over one aspect of its regulation. But this control is not commonly thought to detract from the agency's independence, partly because a majority vote of the NRC Commissioners can overrule an OMB decision on the NRC's paperwork demands, and partly because in any system of government some central body—in the U.S. system the Congress and the President—has ultimate authority over any agency's budget. Moreover, the NRC has always received sufficient resources to carry out its essential functions.

Question No: 015

Module 03: Responsibilities and functions of the Regulatory Body

Question

- 1) How is the regulatory body funded?
- 2) Is this funding independent of governmental agencies or industry groups that promote nuclear technologies?
- 3) Is the budget of the regulatory body subject to review and approval by government agencies?

Response

1) Each fiscal year, the Commission submits a budget request to OMB. In accordance with the Budget and Accounting Act of 1921 (31 U.S.C. 1101 et seq.), OMB may revise the amount of this request. After OMB approval, the budget request is submitted to the Congress for enactment of appropriations.

Annual appropriation acts are enacted by the Congress, providing NRC with specific appropriations to fund necessary expenses of the Commission in carrying out the purposes of the ERA, the Atomic Energy Act of 1954, as amended (AEA), and other statutes authorizing NRC mission activities. The annual appropriations provide budget authority for the NRC to pay staff salaries and benefits, utilize contractual support, and incur other necessary costs, such as travel expenses.

2) In accordance with the Omnibus Budget Reconciliation Act of 1990, as amended by the Energy Policy Act of 2005, the NRC's appropriations are financed primarily from licensing and inspection fees charged to industry. More specifically, the NRC is required to recover from fees approximately 90 percent of its budget authority, less appropriations from the Nuclear Waste Fund, appropriations to implement Section 3116 of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005, and generic homeland security costs. The NRC's appropriations are not dependent upon these industry fees. The actual collection of fees does not change the specific amounts appropriated to the NRC to meet its statutory mission. Commission policy is that fees should not be a primary factor in determining the work to be performed in response to NRC's health and safety mission. It is the Commission's position that programmatic decisions in response to NRC mandates will not be driven by fees.

Civil penalty fees collected by the NRC for violation of agency regulations are deposited with the U.S. Treasury in accordance with 31 U.S.C. 3302, "Custodians of Money," and are not available for use by the NRC.

The NRC's funding is appropriated by the Congress and is independent of other Federal agencies that promote nuclear technologies.

- 3) The proposed budget is provided by the NRC to OMB and Congress for review and approval.
- 4) The U.S. Department of Energy is responsible for promoting nuclear technologies. The Department does not review or approve the NRC's budget.

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Question No: 017

Module 03: Responsibilities and functions of the Regulatory Body

Question

Describe how the legislation (or other legal instrument, e.g., decree) gives the regulatory body the authority to:

- I. develop safety principles and criteria?
- II. establish regulations and issue guidance?

Response

I. Section 161.b of the AEA authorizes the NRC to “establish by rule, regulation, or order, such standards and instructions to govern the possession and use of special nuclear material, source material, and byproduct material as the Commission may deem necessary or desirable to promote the common defense and security or to protect health or to minimize danger to life or property.”

II. Section 161.b of the AEA authorizes the NRC to “establish by rule, regulation, or order, such standards and instructions to govern the possession and use of special nuclear material, source material, and byproduct material as the Commission may deem necessary or desirable to promote the common defense and security or to protect health or to minimize danger to life or property.”

III. Section 161.o of the AEA authorizes the agency to require such reports as “may be necessary to effectuate the purposes of this Act.” Commission regulations require safety analysis reports as part of the application for a license and also require that such analysis be kept up to date (see Title 10 of the Code of Federal Regulations (10 CFR) 50.34(a) and (b), and 50.71(e)).

IV. Section 161.c of the AEA authorizes the Commission to obtain such information as it deems necessary or proper to assist it in exercising its authorities. The same section authorizes the agency to issue subpoenas to obtain such information.

V. Section 103 of the AEA authorizes the Commission to issue licenses to nuclear power plants “subject to such conditions as the Commission may by rule or regulation establish to effectuate the purposes and provisions of this Act” (see also Section 183). Section 187 of the AEA makes the terms and conditions of licenses subject to amendment, revision, or modification “by reason of rules and regulations issued in accordance with the terms of this Act.” Section 186 of the AEA authorizes the agency to revoke licenses under certain conditions, including “failure to observe any of the terms and provisions of this Act or of any regulation of the Commission.” These authorities are implemented by, among other laws, 10 CFR 50.100, “Revocation, Suspension, Modification of Licenses, Permits, and Approvals for Cause,” of the NRC’s regulations.

VI. Section 161.o of the AEA authorizes the agency to require such reports as “may be necessary to effectuate the purposes of this Act.” The Commission’s regulations require that nuclear power plant licensees continually update the safety analysis report that was part of their application for a license (see 10 CFR 50.71(e)). If a licensee applies to have the license renewed, the licensee must submit an integrated safety assessment that demonstrates that structures and components requiring aging management have been identified and will be maintained so that the level of safety during the term of the renewed license will be acceptable (see 10 CFR 54.21, “Contents of Application—Technical Information”).

VII. Section 161.o of the AEA authorizes the Commission to conduct such inspections “as may be necessary to effectuate the purposes of this Act.” This authority is implemented in 10 CFR 50.70, “Inspections.”

VIII. Chapter 18 of the AEA sets forth the legislative provisions for enforcing the provisions and requirements of the AEA. Both civil and criminal penalties are specifically assigned to violations of the AEA and vary in severity depending on legislative determinations of what is appropriate for various classes of offenses. The Commission is empowered to impose civil monetary penalties, and the Commission may ask the Attorney General of the United States to seek to enjoin violations or impose fines and imprisonment.

IX. Legislation does not directly address this issue, but history and practice—for example, the emergency situation created by the accident at Three Mile Island in 1979—have shown that the NRC needs no special authority to communicate directly with the President or Vice President, or with heads of other Federal agencies, including Cabinet-level departments such as energy and homeland security, when the Commission considers it necessary to do so. The practice of high-level communication is supported by, among other things, memoranda of understanding among agencies, Presidential Executive Orders, and Executive Branch plans for dealing with emergencies.

X. Section 161.c of the AEA allows the Commission to obtain such documents and opinions from private or public organizations or persons as may be necessary and appropriate. In proceedings before Commission adjudicators, or in courts of the United States, the Commission would have the ability to seek subpoenas for any necessary documents that had been refused when sought on a voluntary basis.

XI. Title 5 of the United States Code (The Administrative Procedure Act, including the Freedom of Information Act, 5 U.S.C. 552(a)(1)) contains requirements that the matters listed be made publicly available and published in the Federal Register (FR) by the various departments and agencies of the government. The NRC is covered by such requirements. The agency’s independence—which depends principally on the statutory provision that makes a Commissioner removable only “for cause” and not at the pleasure of the President (42 U.S.C. 5841(e))—in practice has meant that the NRC’s decisions generally are not subject to review by the President or another executive agency.

XII. Under the Administrative Procedure Act, the presumption is that government information and activity is open to the public. Government records may be withheld only when they fall under specified exceptions (see the Freedom of Information Act, 5 U.S.C. 552), and Commission meetings may be closed only under limited and specific circumstances (see the Government in the Sunshine Act, 5 U.S.C. 552(b)). In addition, Section 208 of the ERA, which established the NRC, requires an annual listing of abnormal occurrences. Also, annual reports to the President regarding Commission activities and findings are required in broad areas and are submitted to Congress (see Section 307(c) of the ERA).

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XIII. Several statutes provide for such coordination. This response mentions only some prominent ones. Section 274 of the AEA establishes a formal means of cooperation with U.S. States that are interested in assuming the responsibility for licensing and otherwise supervising the possession and use of nuclear materials other than those used in reactors, in a program that is compatible with NRC requirements. Section 274.h also provides for a Federal Radiation Council, whose membership includes the heads of several Federal agencies (e.g., defense, commerce, and labor). The Council may consult in addition with the National Academy of Science and others on radiation matters. In conformance with Section 274 and other general authorities in Section 161 of the AEA, and with general authorities in the ERA, the NRC maintains a special office for liaison with State and Tribal governments. Under a policy statement on cooperation with States in which nuclear power plants are located, the NRC allows State representatives to observe NRC inspections (see 57 FR 6462; February 25, 1992). Section 205 of the ERA authorizes coordination with both governmental and nongovernmental bodies in the conduct of safety research. The National Environmental Policy Act requires consultation among the Federal agencies involved in actions affecting the environment.

XIV. To promote cooperation and the exchange of regulatory information, the NRC participates with other nations through the United States' membership in both the International Atomic Energy Agency (IAEA) and the Nuclear Energy Agency (NEA) of the Organisation for Economic Co-operation and Development (OECD). Authorization for the former is in the International Atomic Energy Agency Participation Act of 1957 (Pub. L. 85 177, 71 Stat. 5899 (1957)), and for the latter, in the U.S. ratification of the Convention on the OECD on April 12, 1961. Under the auspices of IAEA, the United States has joined, among other international agreements, the Treaty of the Non-Proliferation of Nuclear Weapons, the Convention on the Physical Protection of Nuclear Material, Convention on Early Notification of a Nuclear Accident, the Convention on Nuclear Safety, the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, the Additional Protocols I and II to the Treaty for the Prohibition of Nuclear Weapons in Latin America, and the Agreement between the United States of America and the IAEA for the Application of Safeguards in the U.S.A. Section 144 of the AEA also authorizes formal cooperation with another nation at the request of the President, even permitting release of restricted data and other specified classified information under specified conditions. (See also Section 123 of the AEA, which governs formal cooperation with other nations.)

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Question		
How does the Regulatory Body define policies, safety principles and associated criteria as a basis for its regulatory actions?		
Response		
Section 161b of the AEA gives the agency broad authority to define such policies, safety principles, and associated criteria as the Commission thinks necessary to protect public health and safety and the common defense and security. These policies, principles, and criteria are spelled out in regulations issued after public notice and comment, policy statements (generally also issued after public notice and comment), guidance to applicants on how to meet the regulations and policies (often issued after notice and comment), and public adjudicatory hearings in licensing proceeding and enforcement cases.		
Whenever the NRC authorizes a facility or an activity, the NRC provides an evaluation that contains the rationale for granting the authorization. The evaluation addresses the environmental review, the safety review, legal requirements, and any conditions imposed on the facility or the activity. The NRC's decision and its rationale are publically available.		

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Question No: 019

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Question

How does the regulatory body:

I. Establish, promote or adopt regulations and guides upon which its regulatory actions are based?

II. Review and assess submissions on safety from the operators both prior to authorization and periodically during operation as requested?

Response

I. The NRC has an extensive set of regulations, which are contained in 10 CFR, "Energy." The CFR is a codification of the regulations promulgated by Federal agencies. The CFR is edited annually to present the regulations effective as of the revision date of the volume. The CFR, used in conjunction with the daily Federal Register, provides a current version of an agency's regulations. The NRC develops new regulations utilizing processes that comply with the Administrative Procedure Act, along with several other applicable regulations. Rulemaking is a deliberative process that engages most of the NRC's offices and includes an independent technical review committee. Rulemaking generally involves several stages that typically include the following: 1) development of the rulemaking regulatory basis, 2) issuance of the proposed rule for public comment, and 3) issuance of a final rule following resolution of public comment. The impetus for a new regulation can come from several sources, including Congressional mandates (new statutes) or Executive Branch orders, NRC or Executive Director for Operations (EDO) directives, issues identified by NRC staff, or the public (petitions for rulemaking). Additional guidance on the NRC's rulemaking process can be found in the current versions of Management Directive (MD) 6.3 "The Rulemaking Process", LIC 300 "Rulemaking Procedures," and NUREG/BR 0053, "United States Nuclear Regulatory Commission Regulations Handbook." The process for developing supporting guidance is very similar, and in many cases identical, to the above process when the regulatory guidance is developed in conjunction with the new regulation. The various types of documents related to the agency's regulations, regulatory guidance, and generic communications are accessible to the public in the agency's external Web site via an electronic reading room.

II. An application for authorization to construct and operate a nuclear power reactor is reviewed by cognizant NRC staff in all technically relevant areas for compliance with NRC requirements, using established standard review plans and other guidance materials. Guidance has also been developed for various types of applications that may be requested during operation, such as license amendments, code alternatives, or exemptions. In preparation for anticipated new reactor license applications, the NRC has and continues to update its standard review plans, numerous regulatory guides, and other materials.

III. The NRC has an established process for issuing, amending, or revoking authorizations that is discussed in 10 CFR Part 2, "Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders." For instance, Subpart A contains provisions for issuance, amendment, transfer, or renewal of a license, and Subpart B, procedures for imposing requirements by order, or for modification, suspension, or revocation of a license, or for imposing civil penalties.

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Question No: 020

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Question

How do the conditions of authorization specify:

I. the facilities, activities or inventories of sources covered by the authorization?

Response

I. An operating license for a nuclear power plant typically lists the facility, the operator, the radioactive materials, and limitations on the possession and use of such material.

II. Changes to a facility are controlled by 10 CFR 50.59, “Changes, Tests and Experiments.” Licensees may make changes to the facility as described in the final safety analysis report (FSAR), or to procedures, tests, and experiments not described in the FSAR, without prior NRC approval—provided they do not trigger any of the criteria specified in 10 CFR 50.59. If the change results in any of several conditions, the licensee may not make the change without asking the NRC for a license amendment. For example, if the change would result in more than a minimal increase in the frequency or consequences of an accident previously evaluated in the FSAR, or if the change would create a possibility for an accident of a different type than any previously evaluated in the FSAR, the licensee must request a license amendment.

III. An operating license typically lists a great many obligations and sweeps others in by a general statement of the following sort: “This license is deemed to contain and is subject to the conditions set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act, and the rules, regulations, and orders of the Commission, now or hereafter applicable.”

IV. Appendix A to the license contains the technical specifications applicable to the facility. According to 10 CFR 50.36, “Technical Specifications,” of the Commission’s regulations, the technical specifications must include safety limits, limiting safety system settings, limiting conditions for operation, surveillance requirements, design features, and administrative controls. These categories are defined in the regulations as follows. Safety limits for nuclear reactors are limits upon important process variables that are found necessary to reasonably protect the integrity of certain physical barriers that guard against the uncontrolled release of radioactivity. Limiting safety system settings for nuclear reactors are settings for automatic protective devices related to those variables having significant safety functions. Limiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility. Surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operations will be met.

Exposure and discharge limits are found in 10 CFR Part 20, “Standards for Protection Against Radiation,” of the NRC’s regulations, in 40 CFR Part 190, “Environmental Radiation Protection Standards for Nuclear Power Operations,” of the Environmental Protection Agency’s (EPA’s) regulations, and in the National Pollutant Discharge Elimination System (NPDES) permits issued either by the EPA or by a State to which that authority has been delegated. In general, environmental protection is the subject of Appendix B to the operating license.

V. Appendix A to a license contains the technical specifications governing a spent fuel pool. Also, the NRC’s orders, rules, and regulations on waste processing—like all orders, rules, and regulations generally—are deemed by the license to be part of it. (e.g., “This license is deemed to contain and is subject to the conditions set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act, and the rules, regulations, and orders of the Commission, now or hereafter applicable.”)

VI. Typically, a license does not list these separate authorizations. Requirements for these are spelled out in either statute or regulation, for example, 10 CFR Part 54, “Requirements for Renewal of Operating Licenses for Nuclear Power Plants,” and 10 CFR 50.82, “Termination of License.”

VII. Incident reporting requirements may be contained in license conditions. They are also contained in 10 CFR 20.2202, 50.72, 50.73, and 73.71 of the Commission’s regulations. In 10 CFR 20.2202, “Notification of Incidents,” the NRC sets forth the notification requirements for unplanned events that cause an individual to receive a radioactive dose that exceeds certain limits. In 10 CFR 50.72, “Immediate Notification Requirements for Operating Nuclear Power Reactors,” the NRC requires that emergency reports be made immediately, and that nonemergency events (deviations from the plant’s technical specifications that are not emergencies) must be reported within 1 hour. Further, 10 CFR 50.72 describes those reports that must be made to the NRC within 4 and 8 hours after the occurrence of the specified events. This section also contains requirements regarding the contents of each report. In 10 CFR 50.73, “Licensee Event Report System,” the NRC mandates the establishment of the licensee event report system. This section provides an extensive list of situations that require the licensee to notify the Commission within 60 days of their occurrence. Also included are requirements for the form and contents of these reports. In 10 CFR 73.71, “Reporting of Safeguards Events,” the NRC sets forth the notification requirements for “safeguards” events, which include events involving an intent to inflict significant damage on a power reactor and events involving a vulnerability in a safeguard system for which no compensatory measure had yet been employed.

VIII. Appendix B to the license contains some requirements for environmental reporting. Numerous reports are required by NRC regulation, such as 10 CFR 50.71, “Maintenance of Records, Making of Reports”; see there especially Subsection (e), which requires that the licensee’s FSAR be kept up-to-date.

IX. Appendix A to the license, “Technical Specifications,” contains some recordkeeping requirements, for example, records of offsite dose calculations. So too do various regulations, such as 10 CFR Part 20, Subpart L, “Records,” which requires, among other things, that records be kept of, among other things, occupational exposures and releases of radioactive effluents to the environment.

X. The license typically does not contain emergency preparedness arrangements. Those are set forth in the emergency plans that each licensee must, by regulation, maintain, and which are governed by criteria mainly given in 10 CFR 50.47, “Emergency Plans,” and Appendix E, “Emergency Planning and Preparedness for Production and Utilization Facilities,” to 10 CFR Part 50, “Domestic Licensing of Production and Utilization Facilities.” (Guidance on

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how to meet these standards is given in NUREG 0654/FEMA REP 1, "Criteria for the Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.")

Question No: 021

Module 03: Responsibilities and functions of the Regulatory Body

Question

- 1) How does the regulatory body carry out regulatory inspections?
- 2) How does the regulatory body ensure that corrective actions are taken if unsafe or potentially unsafe conditions are detected?
- 3) How does the regulatory body take the necessary enforcement action in the event of violations of safety requirements?

Response

1) The NRC inspection program for operating power reactors is a risk-informed program that is based on reactor facility licensee performance and is generally performed by NRC staff. The program is administered through the Reactor Oversight Process (ROP), which is described in Management Directive 8.13, "Reactor Oversight Process," and Inspection Manual Chapter (IMC) 0308, "Reactor Oversight Process Basis Document". As described in IMC 2515, "Light Water Reactor Inspection Program—Operations Phase," the inspection portion of the ROP consists of baseline inspections, supplemental inspections, special/infrequent inspections, and reactive inspections. Baseline inspections are the minimum level of inspection that all plants receive regardless of performance. Supplemental inspections are used when either performance indicators (PIs) or other inspections (principally the baseline inspection program) indicate declining licensee performance. Special inspections are performed during a period of special/unique operations at a plant (e.g., license renewal, power uprate, steam generator replacement). Reactive inspections are used to follow up on plant events to determine their significance and to determine the necessary NRC response. Additional information regarding the details of the NRC's operating reactor inspection program is provided in the responses to Questions 139–160.

2) Licensees are responsible for ensuring that a facility is operated in a safe manner and for taking appropriate actions if an unsafe or potentially unsafe condition is detected. Licensees accomplish this through adherence to all regulatory requirements and compliance with technical specifications (TS) to ensure the operability of vital equipment. The TS are a part of the license for a facility, and a facility is generally assumed to be operating in a safe condition as long as the TS operability requirements are met. The licensee's process of ensuring operability is continuous and consists of verification by conducting surveillances and performing continuous monitoring of plant systems. Licensees are obligated to ensure the continued operability of structures, systems, and components (SSCs) as specified by TS, or to take the remedial actions addressed in the TS. The NRC inspects a sampling of licensee's operability evaluations for risk significant SSCs to verify if operability is justified, such that availability is assured, and no unrecognized increase in risk has occurred. Also, the inspections verify that operability concerns associated with plant issues and events are being identified.

Licensee's corrective action programs must meet the requirements of Criterion XVI, "Corrective Action," of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50. As part of this requirement, licensees are responsible for the identifying and correcting conditions adverse to quality. In order to minimize the potential recurrence of an unsafe or potentially unsafe condition, licensees are expected to have a robust and effective corrective action program under the ROP. An NRC review of each licensee's corrective action program is conducted as part of the baseline inspection program using the guidance contained in Inspection Procedure (IP) 71152, "Identification and Resolution of Problems." One of the main objectives of this IP is to determine whether or not licensees are complying with NRC regulations regarding corrective action programs.

The significance of an NRC inspection finding is evaluated through the significance determination process. If a finding's risk significance is determined to be more than very low (i.e., white, yellow, or red), then a supplemental inspection is performed to review the licensee's evaluation of an issue. Additional information on supplemental inspections is provided in the response to Question 144. These inspections are part of the agency's overall assessment of licensee's safety performance. Based on this assessment, the NRC determines the appropriate level of agency response and oversight, including pertinent regulatory actions (ranging from management meetings up to and including orders for plant shutdown).

3) The NRC's Enforcement Program uses a graded approach for violations, both in terms of addressing their significance and developing sanctions. A full description of the NRC's Enforcement Program is provided in the response to Question 162. The NRC assesses the significance of a violation by considering actual safety consequences, potential safety consequences, potential for impacting the NRC's ability to perform its regulatory function, and any willful aspects of the violation. Violations are assigned a severity level ranging from Severity Level I for the most significant violations to Severity Level IV for those of more than minor concern. NRC may issue orders or civil penalties for Severity Level I, II, or III violations.

The ROP uses the significance determination process to determine the safety significance of most inspection findings identified at commercial nuclear power plants. Depending on their significance, inspection findings are assigned the colors of green (least significant), white, yellow, or red (most significant). After determining the safety significance associated with an inspection finding, the NRC determines whether or not the finding is also a violation of regulatory requirements.

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Question No: 022

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Question

How does the Regulatory Body:

I. establish a process for dealing with applications, such as the application for the issuing of an authorization, accepting a notification or the granting of an exemption, or for the removal from regulatory control?

Response

I. Regulations, for example those in 10 CFR Part 50, set forth requirements for applications for licenses, permits, and granting an exemption.

II. The regulatory body can change the conditions of authorizations (licenses) through imposition of an order or, after review of a request from the license holder, issuance of a license amendment. NRC regulations, such as 10 CFR 50.90, "Application for Amendment of License, Construction Permit, or Early Site Permit," 10 CFR 50.91, Notice for Public Comment; State Consultation," and 50.92, "Issuance of Amendment," set forth the license amendment process. The process for issuance of an order is set forth in the regulations at 10 CFR 2.202, "Orders."

III. Regulations, such as 10 CFR 50.34, "Contents of Applications, Technical Information," set forth the information required to be included in an applicant's safety analysis report and assessments. Regulatory Guides (RGs), such as RG 1.70, "Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants (LWR Edition)," provide more detailed guidance on content.

IV. Regulations, such as 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding," 10 CFR 9.17, "Agency Records Exempt from Public Disclosure," and 10 CFR 9.104, "Closed Meetings," ensure that proprietary information is protected. Regulations (e.g., 10 CFR 2.390) provide for applicants to request withholding of information from public release on certain grounds, including information considered proprietary. Volume 3, "Information Management," of the NRC MDs establishes responsibilities and provides internal guidance and policy to the staff regarding protecting identified proprietary information.

V. Regulations (e.g., 10 CFR 2.103, "Action on Applications for Byproduct, Source, Special Nuclear Material, Facility and Operator Licenses," and 10 CFR 2.108, "Denial of Application for Failure to Supply Information") prescribe the circumstances under which applications for actions can be denied or rejected.

VI. Regulations require the NRC to communicate with other governmental bodies and the public (e.g., 10 CFR 2.105, 10 CFR 2.106, 10 CFR 50.91, 10 CFR 51.30). These regulations all reflect requirements imposed by statutes such as the Administrative Procedure Act and the National Environmental Policy Act. Volume 5, "Governmental Relations and Public Affairs," of the NRC MDs establishes responsibilities and provides internal guidance and policies regarding communication with the public, communication with other U.S. and local government bodies, communication with international governments, and participation in the International Nuclear Event Scale.

VII. The NRC has in place a program to appropriately analyze plant incidents and disseminate results to licensees. NRC Management Directive 8.7, "Reactor Operating Experience Program," outlines the policy and objectives of the agency's program to analyze operating experience and disseminate lessons learned to stakeholders. This program effectively coordinates the systematic review of operating experience (OpE) gained from the nuclear power industry and research and test reactors. After collecting, evaluating, and assessing the significance of OpE, the NRC provides timely and effective communication to stakeholders and applies the lessons learned to regulatory decisions and programs affecting nuclear reactors. The effective communication of lessons learned to stakeholders is administered under Management Directive 8.18 "NRC Generic Communications Program."

Management Directive 8.7 establishes the NRC's Office of Nuclear Reactor Regulation (NRR) as the lead organization responsible for processing and managing reactor OpE information to ensure that the major program areas are able to continuously learn from OpE and apply the lessons learned. NRR also executes a coordinated, systematic, program to ensure that timely decisions are made with respect to the application of OpE. The NRC's Generic Communications Program informs licensees and other stakeholders of significant OpE information and regulatory issues and obtains information from licensees, where appropriate.

VIII. Regulations at 36 CFR, Subchapter B, "Records Management" (Parts 1220–1238) provide general requirements for identification and maintenance of government records. Volume 3 of the NRC Management Directives, "Information Management," establishes responsibilities and provides internal guidance and policies regarding management of records related to the safety of facilities and licensing activities. In addition, regulations at 10 CFR 50.71 require licensees to maintain records.

IX. The NRC exchanges safety-related information through both formal and informal arrangements including international conventions, codes of conduct, bilateral agreements with States, and memoranda of understanding to fulfill safety obligations and to promote cooperation. For many years, the NRC has provided both regular-budget and cost-free expert staff support to IAEA as well as numerous participants in safety missions, conferences, steering groups, safety standards committees, consultancies, and technical meetings. A number of OpE documents, such as NRC generic communications, event notifications, and reports required under 10 CFR Part 21, "Reporting of Defects and Noncompliance," are published on the NRC's public Web site, which is available to the international community as well. The NRC continues to strive for excellence in the use and sharing of international OpE, working closely with the international community and organizations such as IAEA and NEA. Each year, the NRC participates in the IAEA/NEA meeting to exchange information on recent events at nuclear power plants. Additional information with respect to the information exchange and sharing of international standards and recommendations can be viewed under IRRS Question 068.

X. The NRC's ROP, which is described in IMC 0305, "Operating Reactor Assessment Program," serves the purpose of a systematic safety reassessment. The NRC's observation of how a licensee is performing is communicated to the licensee every 6 months through the ROP. This assessment includes a schedule of periodic (baseline) inspection activities and supplemental inspections that provide a systematic assessment of the licensee's response to

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indications of a significant degradation in performance.

XI. The NRC is responsible for ensuring safe operation of commercial nuclear facilities in the United States. There is no statutory requirement for the NRC to advise other government agencies on matters relating to nuclear safety. The NRC does provide information to the U.S. Congress through the use of various reports and responses to inquiries from Congress. The agency also reviews U.S. Navy reactor designs and consults with agencies that have related regulatory functions, e.g., agencies such as the EPA, which sets some environmental standards on radioactive emissions, and the U.S. Department of Energy, which oversees the safety of its own nuclear facilities.

XII. Licenses for reactor operators and senior reactor operators of commercial nuclear power plants are issued in accordance with 10 CFR Part 55, "Operators' Licenses." An application completed in accordance with 10 CFR 55.31, "How to Apply," describes the applicant's qualifications and requires the facility licensee to certify that the applicant has satisfied the facility licensee's training and experience requirements to be a licensed operator or senior operator. An applicant must also undergo a physical examination per 10 CFR 55.21, "Medical Examination," and be certified physically and mentally fit to be an operator. If the applicant's qualifications and physical condition are acceptable to the NRC per 10 CFR 55.33, "Disposition of an Initial Application," the applicant takes an NRC licensing examination. The examination process begins early in the applicant training program with a written examination covering reactor theory, thermodynamics, and mechanical components. The examination is a prerequisite for taking the site-specific examination. The site-specific examination for reactor operators consists of a second written examination and an NRC-administered operating test per 10 CFR 55.41, Written Examination: Operators," and 10 CFR 55.45, "Operating Tests," respectively. The operating test includes a plant walkthrough examination and a crew-based performance examination on the facility licensee's power plant simulator. Individuals who apply for a senior operator's license must also pass an additional written examination per 10 CFR 55.43, "Written Examination: Senior Operators," and a more rigorous operating test.

The examinations may be prepared by the licensee and approved by the NRC, or the facility licensee may request the NRC to prepare the examinations. All examinations are prepared and administered using the guidance in NUREG 1021, "Operator Licensing Examination Standards for Power Reactors." Successful applicants receive a license that is valid only for the operation of the facility for which the applicant applied, and it expires 6 years after the date of issuance or upon termination of employment with the facility licensee or other conditions as specified in 10 CFR 55.55, "Expiration."

Additionally, the NRC requires nuclear facilities to have fitness-for-duty programs in accordance with 10 CFR Part 26, "Fitness for Duty Programs," to provide reasonable assurance that nuclear facility personnel are trustworthy, will perform their tasks in a reliable manner, are not under the influence of any substance, legal or illegal, that may impair their ability to perform their duties, and are not mentally or physically impaired from any cause that can adversely affect their ability to safely and competently perform their duties.

XIII. The NRC confirms that plant safety is managed adequately and satisfies itself that the licensee's safety performance meets the objectives of operational safety through implementation of the ROP as described in the response to Question 156. In addition, the NRC encourages a strong licensee safety culture and reviews its implementation through the ROP inspection and assessment processes as described in the response to Question 67AS.

IRRS Question and Response Report

Question No: 023

Module 03: Responsibilities and functions of the Regulatory Body

Question

How does the regulatory body co-operate with other relevant authorities, advise them and provide them with information in the following areas:

- I. environmental Protection?
- II. public and occupational health?

Response

I. Under the National Environmental Policy Act (NEPA) and the NRC's implementing regulations in 10 CFR Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions," the NRC must prepare an Environmental Impact Statement (EIS) for every proposed reactor as part of the licensing process. The NRC obtains the views of EPA and the Federal Council on Environmental Quality and responds to their comments before adopting its EIS. NEPA also requires contact with any other relevant agency (see 42 U.S.C. 4332(1)(c)(v)). The EIS process is also one in which State and local authorities and the public may and do actively participate. Not all reactor licensing actions entail a significant impact on the environment. Therefore, in such cases, the NRC is not required to prepare an EIS before acting. The agency nonetheless performs an environmental assessment that provides evidence and analysis sufficient for a determination that the action will not entail a significant impact on the environment.

II. The NRC maintains a memorandum of understanding (MOU) with the Occupational Health and Safety Agency. The MOU permits cooperation at sites where both agencies have an interest and aims to avoid conflicting requirements by delineation of those matters which fall exclusively in the domain of one or the other agency.

III. The NRC maintains an MOU with the Federal Emergency Management Agency, which has responsibility for offsite monitoring in the event of a radiological accident, and which is a unit within the Cabinet-level U.S. Department of Homeland Security (DHS). The NRC consults regularly with DHS on intelligence or security matters that concern nuclear facilities and materials. In addition, through NRC emergency planning requirements, which are an integral part of the licensing of nuclear reactors, the bases for information exchange are established for the NRC and the State and local governments in proximity to the involved reactor.

IV. U.S. laws, particularly the National Waste Policy Act of 1982 and the Low-Level Radioactive Waste Policy Amendments Act of 1985, provide for specific roles and responsibilities for the relevant authorities for waste management. Acting within their respective roles and responsibilities, the appropriate government agencies (i.e., the U.S. Department of Energy (DOE), EPA, and the NRC) provide information to each other. For example, DOE and the NRC provide comments to EPA regarding standards for high-level waste disposal; DOE and EPA provide comments to the NRC regarding regulations for high-level waste disposal; and the NRC provides guidance in the form of the Yucca Mountain Review Plan to DOE for the types of information that make up one way to demonstrate the safety of a potential repository at Yucca Mountain, Nevada. Additionally, the U.S. Congress can request information from government agencies to assist Congress's deliberations on national policy for high-level waste disposal.

V. Issues of public liability in the event of a nuclear incident are covered by statute—the Price-Anderson Act (Section 170 of the AEA)—to be resolved by the NRC if the matter can be resolved through settlement among the parties, and if not, by the Federal judicial system. The NRC sees to it that all operating reactors have the required insurance (including a retrospective premium pool that provides approximately \$10 billion in available funds). The NRC also executes agreements with its power reactor licensees, agreements that provide for waivers of various defenses for offsite damages from extraordinary nuclear occurrences, and waivers that obviate the need to prove fault of any kind. The agreements provide for economic channeling to the reactor licensees of all responsibility for paying public liability. The Price-Anderson Act system ensures the prompt availability and equitable distribution of funds to pay public liability claims and, by reducing the probability of financial catastrophe, removes a deterrent to private sector participation in nuclear power.

The Price-Anderson Act is regularly reviewed by the NRC, DOE, and Congress. The two agencies are next to report to Congress in 2021 on whether the Act should be continued or modified (see Section 170p. of the AEA). Their report will have to evaluate the Price-Anderson Act from several different perspectives: the availability of private insurance, the state of the knowledge of nuclear safety, the condition of the industry, and so on. External stakeholders are likely to ask whether the Act provides an unnecessary subsidy to the industry, in the form of a limitation on liability or is necessary to ensure prompt compensation to members of the public. The system will also be evaluated against international standards. Right now, the system does not conform directly to either the Vienna or Paris Conventions. However, there is in the U.S. system what is tantamount to the strict liability required by the Vienna and Paris Conventions. The Price-Anderson law preceded both international conventions and was developed to fit into the U.S. federal system with minimal disruption of State law, so that it would now be awkward to conform directly to either the Vienna or Paris Convention. But in May 2008, the United States ratified the Convention on Supplemental Compensation for Nuclear Damage, which helps link the U.S. system to the international system.

VI. The NRC works with the U.S. intelligence community in assessing threats, publishes standards on physical protection, consults with other authorities in the development of those standards, and, as part of the global nuclear nonproliferation regime, participates in U.S. and international activities to account for and control nuclear material assigned to commercial and other peaceful purposes. The NRC provides technical assistance to IAEA and supports U.S. initiatives to extend and enhance international safeguards and verification programs. The NRC also participates in U.S. physical protection information exchanges with other countries. Teams of specialists visit facilities and hold discussions to ensure that special nuclear materials transferred between countries will be adequately protected in the recipient country. The NRC staff had a lead role in a September 2004 revision to the International Convention on the Physical Security of Nuclear Material.

VII. The NRC has jurisdiction over radioactive emissions to surface waters in the U.S. and provides public information and standards about such emissions in its rules (see, for example, Appendix B, "Annual Limits on Intake (ALIs) and Derived Air Concentrations (DACs) of Radionuclides for Occupational Exposure; Effluent Concentrations; Concentrations for Release to Sewerage," to 10 CFR Part 20), environmental analyses, and inspection reports. Under an MOU with the Federal Emergency Management Agency (FEMA), the NRC and FEMA oversee emergency planning and preparedness; States retain the ultimate authority to direct emergency response during an actual emergency. The NRC shares emergency-related information about water and foodstuffs with FEMA and the States.

IRRS Question and Response Report

VIII. Land use planning is largely within the jurisdictions of individual States, but the NRC's environmental analyses provide planners with a great deal of relevant information (see, for example, NUREG 1437, "Generic Environmental Impact Analysis for License Renewal of Nuclear Plants"). State agencies can participate in the NRC's rulemakings and licensings.

IX. The NRC shares responsibility for safe transport, principally with the U.S. Department of Transportation (DOT). Generally speaking, the NRC establishes requirements for the design and manufacture of packages for radioactive materials; DOT regulates the shipments while they are in transit and sets standards for labeling and smaller quantity packages.

To avoid duplication and improve efficiency in implementing their shared responsibility for regulating the transportation of radioactive materials, the NRC and DOT signed an MOU in 1979. Under the MOU, the NRC provides technical support to DOT and works with DOT to ensure regulatory consistency for transportation issues. The NRC certifies designs for Type B and fissile material packages, approves transportation quality assurance plans, and conducts inspections of licensees against DOT and NRC requirements. The NRC reviews and approves the routes chosen for each planned commercial spent fuel shipment with respect to NRC security requirements. DOT is responsible for regulating the transport of all hazardous materials, including radioactive material. In this role, DOT sets requirements for shipping papers, labeling and marking of packages, placarding of vehicles, carrier safety, and safety criteria for route selection.

The NRC's primary role in the transportation of radioactive material is the review and approval of packages for domestic transport of radioactive material, and the development of physical protection requirements for commercial shipments of spent fuel, some other fissile material, and large-quantity sources. Commercial transportation packages are reviewed by the NRC according to requirements in 10 CFR Part 71, "Packaging and Transportation of Radioactive Material," to ensure the security aspects of shipments for some NRC-licensed material according to the security requirements in 10 CFR Part 73, "Physical Protection of Plants and Materials." Additionally, the Division of Spent Fuel Storage and Transport has numerous meetings and telephone conferences with other relevant authorities. For example, the NRC and DOT meet monthly to discuss issues related to the transport of radioactive material.

Although DOE has the authority to approve transport packages for its own shipments in some instances, the Nuclear Waste Policy Act of 1982 requires that DOE make spent fuel and high-level waste shipments to a repository in NRC-approved transport packages.

Question No:	024	Module 03: Responsibilities and functions of the Regulatory Body
Question		
Does the regulatory body have any additional function such as: I. independent radiological monitoring in and around nuclear facilities? II. independent testing and quality control measurements?		
Response		
I. Such monitoring is done by licensees mainly, and to some extent by State and local governments. In the event of an accident, FEMA monitors offsite radioactivity.		
II. Licensees are required to carry out these functions, and the records are to be made available for inspection by the NRC.		
III. Section 205 of the Energy Reorganization Act of 1974 established the office of Nuclear Regulatory Research (RES) within the NRC. The office is required by the Act to develop recommendations for—and either engage in or contract for—research “which the Commission deems necessary for the performance of its licensing and related regulatory functions.”		
IV. These functions are required to be carried out by licensees.		
V. As part of the global nuclear nonproliferation regime, the NRC participates in U.S. and international activities to account for and control nuclear material assigned to commercial and other peaceful purposes. The NRC provides technical assistance to IAEA and supports U.S. initiatives to extend and enhance international safeguards and verification programs. The NRC participates in U.S. physical protection information exchanges with other countries. Teams of specialists visit facilities and hold discussions to ensure that special nuclear materials transferred between countries will be adequately protected in the recipient country.		
VI. The NRC's jurisdiction over industrial safety extends only to radiation protection of workers. The rest of industrial safety is under the jurisdiction of the Occupational Safety and Health Administration (OSHA), which is part of the U.S. Department of Labor. The NRC and OSHA have entered into an MOU that is designed to ensure that there will be no gaps in worker protection at NRC-licensed facilities where OSHA also has health and safety jurisdiction, and to avoid duplication of effort on the part of the two agencies.		

IRRS Question and Response Report

Question No: 025

Module 03: Responsibilities and functions of the Regulatory Body

Question

If the regulatory body does have one or more of these or similar additional functions, how does the regulatory body:

I. avoid conflicts with its main regulatory functions?

II. ensure that the prime responsibility of the operator for safety is not diminished?

Response

I. Of the additional functions listed in Question 024, the NRC has responsibility for research and development work in support of its regulatory functions, shares with the U.S. Department of Labor some responsibility for industrial safety, and has responsibilities under the Nuclear Non-Proliferation Act of 1978. The NRC believes that these functions neither conflict with the agency's safety functions nor diminish operators' prime responsibility for safety.

The NRC believes that its research responsibility complements its main regulatory functions by providing the basis for making sound regulatory decisions. The NRC's role in research does not diminish the responsibility of a potential applicant or operator for safety. An applicant may need to conduct research to provide the necessary information to support an application for operation of a particular facility. Further, the operator is responsible for conducting such functions as radiological monitoring, testing, and quality control, and medical examinations (such as are required by NRC for reactor operators and security personnel).

The NRC's nuclear export licensing activities and its bi- and multilateral assistance programs help satisfy U.S. obligations under the Nuclear Non-Proliferation Treaty. As part of the global nuclear nonproliferation regime, the NRC participates in U.S. and international activities to account for and control nuclear material assigned to commercial and other peaceful purposes. The NRC provides technical assistance to IAEA and supports U.S. initiatives to extend and enhance international safeguards and verification programs. The NRC participates in U.S. physical protection information exchanges with other countries. Teams of specialists visit facilities and hold discussions to ensure that special nuclear materials transferred between countries will be adequately protected in the recipient country. The NRC staff had a lead role in a September 2004 revision to the International Convention on the Physical Security of Nuclear Material. All of this activity contributes to the NRC's mission to protect public health and safety and helps ensure that licensees are meeting their responsibilities. Also, the conduct of foreign affairs is the exclusive task of the national government, and so the NRC's performance of that task can, almost by definition, not diminish the licensees' prime responsibility for safety.

II. Both the NRC and the U.S. Department of Labor's OSHA have statutory responsibilities for worker safety at NRC-licensed facilities. Because it is not always practical to sharply identify boundaries between the nuclear and radiological safety the NRC regulates and the industrial safety OSHA regulates, a coordinated interagency effort helps avoid duplication of effort. It also helps ensure against gaps in the protection of workers and thus furthers the NRC's health and safety mission. An MOU entered into in 1988 delineates the general areas of responsibility of each agency, describes generally the efforts of the agencies to achieve worker protection at NRC-licensed facilities, and provides guidelines for coordination of interface activities between the two agencies. As with the NRC's nonproliferation efforts, the agency's worker protection efforts in no way detract from licensees' prime responsibilities. The NRC's and OSHA's coordinated efforts help ensure that the licensees meet those responsibilities.

IRRS Question and Response Report

Question No: 026

Module 03: Responsibilities and functions of the Regulatory Body

Question

Has responsibility for the regulator's management system been assigned?

Response

There is a hierarchy of senior management at the NRC, and each level of senior management has established appropriate management controls. These management controls range from overarching controls at the highest level of senior management down to detailed and specific management controls for individual staff at the individual office level. The following paragraphs describe this hierarchy and the management systems and controls associated with each level within this hierarchy.

The NRC is headed by five Commissioners appointed by the President and confirmed by the Senate for 5-year terms. One of them is designated by the President to be the Chairman. The Chairman is the principal executive officer of and the official spokesman for the NRC. As principal executive officer, the Chairman is responsible for conducting the administrative, organizational, long-range planning, budgetary, and certain personnel functions of the agency. The Chairman has ultimate authority for all NRC functions pertaining to an emergency involving an NRC licensee. The Chairman's actions are governed by the general policies of the Commission.

The Commission as a whole formulates policies and regulations governing nuclear reactor and materials safety, issues orders to licensees, and adjudicates legal matters brought before it. The Executive Director for Operations (EDO) is the chief operating officer of the Commission, and is authorized and directed to discharge the operational and administrative functions necessary for the day-to-day operations of the agency. This includes supervising and coordinating policy development, agency operational activities, and implementation of Commission policy directives.

The NRC Management Directive System establishes the basic NRC policies, requirements, and procedures necessary for the agency to comply with Executive Orders, pertinent laws, regulations, and the circulars and directives of other Federal agencies. This management system is augmented with more specific policies and procedures at the office level.

To define the official processes for developing and maintaining the EDO's management role, and to improve the predictability, quality, timeliness and transparency of EDO activities and functions, the Office of the EDO (OEDO) issues official procedures and notices, which can be found on the NRC's internal Web site (<http://www.internal.nrc.gov/oedo/procedures-guidance/index.html>) Management Directive 9.1, "Organization Management," outlines basic policies and standards governing NRC organizational structure, functional assignments, and delegations of authority. MD 9.27, "Organization and Functions, Office of Nuclear Reactor Regulation (NRR)," details the management responsibilities for the Office Director of NRR. These include:

"Assesses the effectiveness of each established program and determines whether the Regions are implementing the programs in a technically adequate and consistent manner, and whether program requirements are being met." In addition, MD 9.27 assigns NRR's Office Director the responsibility for supervising, directing, coordinating, and approving the activities of the various organizational units within the office.

NRR's Office Director and his subordinate managers, collectively known as the Executive Team (ET) have established an internal management process that receives input from the Leadership Team (LT), comprised of either the Director or Deputy from each of the nine NRR divisions. The LT roles and responsibilities are defined in the LT Charter, which includes the following purposes:

- Foster LT awareness of NRR activities and processes that cut across divisional boundaries, with a goal of continuous improvement in organizational alignment and coherence in NRR decisionmaking. Examples: officewide initiatives, work process improvements/practices, management controls, regulatory processes, interoffice coordination issues.
- Coordinate among divisions and provide LT positions and decisions on significant budget, resource utilization, and human capital issues. Examples: SES Candidate Development Program and Leadership Potential Program recommendations, FTE utilization and associated hiring decisions, performance plan development and reviews, midyear appraisal expectations, strategy for awards, secretarial hiring and use, branch chief moves, performance monitoring, budget assumptions and development, operating plan reviews.
- Provide insight for strategic direction for program implementation. The LT provides a forum for staff to obtain collective feedback from NRR leadership on administrative, technical, and regulatory policy issues. The LT may provide endorsement and advice to the staff on selected issues, as requested. The appropriate LT member is the sponsor of the issue and is responsible for identifying the actions being sought from the LT. For issues that could affect the ability of divisions to achieve outcomes, the LT considers the resource impacts of its positions. Examples: technical presentations, formal action plans for resolution of technical issues.
- The LT is not a formal decisionmaking body for technical solutions or direction. Instead, authority and responsibility for decisions are retained by the applicable division directors. This is consistent with ADM 200, "Delegation of Signature Authority."

Senior managers at the Senior Executive Service level, which includes the ET and LT members, enter into annual contracts with their respective senior-level managers as a means of identifying the performance expectations for the coming year. Then, as a means of measuring progress against these performance expectations, the senior managers receive assessments from other offices, as well as measures in the form of quantifiable metrics to achieve for each performance expectation/goal. Similarly, individual employees have individual performance plans that are tied to these same officewide performance goals. This ensures that all staff members are working toward the same goals, and that progress is monitored, measured, and reported. The Director of NRR provides an annual assessment of the office's performance in the form of a briefing to the EDO that contains the highlights of the past year's activities. Accomplishments as well as performance metrics are part of this briefing. These performance metrics are the means of ensuring that NRR's activities are aligned with the agency's Strategic Plan, which is a 5-year outlook on the strategic direction for the agency.

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Performance metrics are continually monitored to assess progress toward achieving both the office-specific and corporate metrics in NRR.

NRR staff provides important feedback on the agency's safety culture and any need for improvement via the Office of the Inspector General (OIG) Safety Culture and Climate Survey. In addition, staff has other avenues for expressing safety concerns, through the Differing Professional Opinions program administered by the Office of Enforcement, and through the nonconcurrence process.

Status of 2009 OIG Safety Culture and Climate Survey

Every 3 years, OIG conducts a survey of all NRC employees regarding the agency's safety culture and climate. OIG conducted the survey in May 2009; the previous survey was conducted in the fall of 2005. The survey gathers employees' views of how the NRC is performing in areas such as workplace environment, communication, differing professional opinions, performance management, training, management leadership, and regulatory effectiveness. The OIG provided the survey results from the 2009 survey to offices in the fall of 2009, and it provided data that can be analyzed down to the division level.

Internal Safety Culture Task Force

The Commission established an Internal Safety Culture Task Force to examine ways to improve the agency's current safety culture framework. The Task Force issued a report and briefed the Commission in May 2009.

IRRS Question and Response Report

Question No: 027

Module 03: Responsibilities and functions of the Regulatory Body

Question

- 1) Please provide an organizational diagram showing the structure of the Regulatory Body.
- 2) Where the Regulatory Body comprises more than one organization, provide a diagram for each.
- 3) The organizational chart(s) should show the management structure, the fields of activity covered by the Regulatory Body and the number of staff

Response

The NRC is headed by a five-member Commission. The President of the United States designates one member to serve as Chairman and official spokesperson. The Commission as a whole formulates policies and regulations governing nuclear reactor and materials safety, issues orders to licensees, and adjudicates legal matters brought before it. The Executive Director for Operations (EDO) carries out the policies and decisions of the Commission and directs the activities of the program offices. The offices reporting to the EDO ensure that the commercial use of nuclear materials in the United States is safely conducted. As part of the regulatory process, the four regional offices conduct inspection, enforcement, and emergency response programs for licensees within their borders. Resident inspectors situated at each site report to the regional offices. Extensive interactions exist between the regional offices and NRR, especially in such areas as event followup, enforcement, and emergency response. NRR serves as headquarters contact with licensees, the regions, and other stakeholders in matters pertaining to assigned facilities, provides the overall safety and environmental project management, and monitors routine operations of power reactors in the regions. Within NRR, the plant project manager ensures proper coordination between NRR and regional staffs. Both staffs support assessment of inspection findings through the highly structured significance determination process (SDP).

The NRC has four advisory committees and boards. The Advisory Committee on Reactor Safeguards (ACRS) has statutory responsibilities to review and advise the Commission with regard to the licensing and operation of production and utilization facilities and related safety issues, the adequacy of proposed reactor safety standards, technical and policy issues related to the licensing of evolutionary and passive plant designs, and other matters referred to it by the Commission.

The Advisory Committee on the Medical Uses of Isotopes (ACMUI) advises the NRC on policy and technical issues that arise in the regulation of the medical uses of radioactive material in diagnosis and therapy. The ACMUI comments on changes to NRC regulations and guidance; evaluate certain nonroutine uses of radioactive material; provide technical assistance in licensing, inspection, and enforcement cases; and bring key issues to the attention of the Commission for appropriate action. Organizationally, the ACMUI falls under the NRC's Office of Federal and State Materials and Environmental Management Programs (FSME).

The Atomic Safety and Licensing Board Panel (ASLBP) conducts hearings for the Commission and performs such other regulatory functions as the Commission authorizes. The Chief Administrative Judge develops and applies procedures governing the activities of boards, administrative judges, and administrative law judges, and makes appropriate recommendations to the Commission concerning the rules governing the conduct of hearings.

The Committee to Review Generic Requirements (CRGR) reviews proposed generic backfits that are to be imposed on all power reactors and/or selected nuclear materials facilities that are licensed by the NRC. The purpose of these reviews is to ensure that such backfits are appropriately justified based on the backfit provisions of applicable NRC regulations and the Commission's backfit policy. CRGR's membership draws from all NRC program and regional offices.

For more information about the NRC's internal and interoffice communication tools and methods, established to ensure consistent and open lines of communication, refer to the response provided in Question 234.

Attached are 29 separate PDF documents that show every major office within the NRC. The number of permanent Federal employees in these offices as of May 12, 2009, is as follows:

- Office Employees
- The Commission 35
- Office of the Secretary 18
- Office of International Programs 34
- Office of Congressional Affairs 11
- Office of Commission Appellate Adjudication 6
- Office of the Chief Financial Officer 121
- Office of General Counsel 106
- Office of Public Affairs 16
- Advisory Committee on Reactor Safeguards 33
- Atomic Safety and Licensing Board Panel 28
- Office of the Executive Director for Operations 40
- Office of Administration 148
- Computer Security Office 15
- Office of Federal and State Material and Environmental Management Program 207
- Office of Human Resources 112
- Office of Nuclear Materials Safety and Safeguards 206
- Office of New Reactors 478
- Office of Nuclear Reactor Regulation 550
- Office of Nuclear Security and Incident Response 208
- Office of Enforcement 29

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-Office of Investigations 40
-Office of Information Services 190
-Office of Nuclear Regulatory Research 243
-Region I 251
-Region II 304
-Region III 226
-Region IV 216
-Office of Small Business and Civil Rights 17
-Office of the Inspector General 51
-Agency Total 3,939

Question No: 028

Module 03: Responsibilities and functions of the Regulatory Body

Question

How does this structure allow it to effectively and efficiently discharge its responsibilities?

Response

Under the EDO, the NRC has specific offices for its major areas of responsibility, which allows each office to focus on its regulatory responsibility. In addition, there are offices to provide administrative support throughout the agency.

The Office of Nuclear Reactor Regulation (NRR) is responsible for the safety regulation of operating reactors. There are separate NRC offices for administration, human resources, information technology, international programs, legal counsel, research, enforcement, and for regulation of new reactor licensing, radioactive materials, waste, and security. In addition, there are four regional offices that conduct the inspection program for operating reactors. NRR interfaces with these other offices as needed to carry out its duties of operating reactor safety regulation.

The NRC is structured so as to perform its responsibilities effectively and efficiently. Functions are grouped and assigned to units or organizations to combine related functions and separate unrelated functions. Groupings are designed to avoid duplication and overlapping of functions, and to prevent unnecessary fragmentation of responsibilities. The structure provides for a focus on nuclear safety and security undiluted by administrative and other nontechnical tasks.

The number of organizational components is kept to a minimum consistent with effective combination and separation of functions. Components are established, abolished, or consolidated consistent with functional substance and workload and changes thereto.

The number of individuals or units reporting to one supervisor is limited to the number that can be effectively directed and evaluated but includes the maximum number that can be effectively directed and evaluated.

The number of administrative levels is kept to a minimum consistent with the need for management and control of the work involved. Having excess levels tends to increase the time for communicating instructions and for obtaining decisions.

One of the strengths of the NRC is its willingness to modify or realign its regulatory structure to accommodate new mission requirements or incorporate best practices into the agency's safety decisionmaking framework.

The NRC strives to utilize best practices in carrying out its regulatory safety mission. The increasing integration of risk-informed processes in safety decisionmaking well illustrates this concept. The NRC was a pioneer in developing risk assessment methodologies and then incorporating them in its regulatory processes. This was accomplished in an incremental way, leading to the issuance of the Probabilistic Risk Assessment (PRA) Policy Statement in 1995, which expressed the Commission's intent that use of PRA technology should be increased in all regulatory matters to the extent supported by the state-of-the art in PRA methods and data and in a manner that complements the NRC's deterministic approach and supports the NRC's traditional defense-in-depth philosophy. The Division of Risk Assessment was created within NRR to help facilitate the integration of risk methods throughout the Office. Recognizing that various levels of uncertainty exist, the NRC does employ a risk-informed rather than risk-based process, where risk is used in a complimentary manner with more traditional engineering analysis. Because safety decisions must be robust, even in the face of such uncertainty, some conservatism are often retained, even though risk assessment methods attempt to be a best-estimate process. Due to these factors, strong interaction between the deterministic and probabilistic staffs is necessary and well supported by the current structure.

IRRS Question and Response Report

Question No: 029

Module 03: Responsibilities and functions of the Regulatory Body

Question

How does the structure and size of the Regulatory Body match with the extent and nature of facilities and activities it regulates?

Response

The NRC is structured and sized to regulate commercial, research, test, and training reactors; nuclear fuel cycle facilities; medical, academic, and industrial uses of radioactive materials; and transportation, storage, disposal of radioactive materials in order to protect public health and safety and provide for common defense and security. The organizational structure includes major offices such as NRR, New Reactors, Nuclear Material Safety and Safeguards, Nuclear Regulatory Research, Federal and State Materials and Environmental Management Programs, Nuclear Security and Incident Response, and four regional offices. Also, support offices, including the Office of Information Services, Chief Financial Officer, and Inspector General, contribute to the efficiency and overall mission of the NRC.

The NRC has adequate authority and power, staffing, and financial resources to discharge its assigned responsibilities. In particular, the agency is given the legal power to discharge the responsibilities assigned to it by law. Moreover, the agency has the resources—both money and staffing—to ensure the safe operation of existing nuclear power plants and review of applications for new reactors. By law, the NRC must recover, through fees billed to licensees, approximately 90 percent of its budget authority for fiscal year (FY) 2009, less the amounts appropriated from the Nuclear Waste Fund for high-level radioactive waste activities and from general funds for waste incidental to recycling and generic homeland security activities. Fees are to be collected each year by September 30.

The NRC conducts an annual review of the resources (funds and manpower) needed to regulate operating power reactors and review new power plant applications in developing the NRC's annual budget request. If changes are made, senior management is made aware of the impact of the changes and expectations are set accordingly.

In addition to the budget, specific performance measures and milestones necessary to complete the NRC mission are developed. The NRC's performance against these milestones and resultant resource utilization is tracked in monthly performance reports and is part of budget execution. The performance criteria and milestones are examined each FY and adjusted as necessary to reflect necessary changes in priorities and unexpected events.

Adjustments are made throughout the FY (October 1–September 30) to accommodate the actual workload in the fiscal year and to accommodate emergent work.

Question No: 030

Module 03: Responsibilities and functions of the Regulatory Body

Question

What were the principal reasons used to determine the present size and structure?

Response

For the current FY 2009, the following workload factors, together with specific output targets, were used to determine the size and structure for the operating reactor safety and security programs:

- 104 operating power reactors (all baseline inspection procedures completed)
- 3,000 items of potential interest for screening from daily operations
- 1,150 significant licensing actions
- 12 rulemakings
- 4 license renewals
- 600 other safety and security licensing tasks
- 55 initial licensing examinations and 4 generic fundamentals examinations administered

The NRC develops the yearly budgets based on past history, input from industry on operating cycles, projected licensing actions, and other known events. The NRC does have the flexibility to reprogram resources based on changing priorities and needs in order to focus on reactor safety activities.

IRRS Question and Response Report

Question No: 031

Module 03: Responsibilities and functions of the Regulatory Body

Question

Does the Regulatory Body have sufficient authority and resource to discharge its responsibilities?

Response

The NRC has adequate authority and power, staffing, and financial resources to discharge its assigned responsibilities. In particular, the agency is given the legal power to discharge the responsibilities assigned to it by law, as several of the answers to other questions confirm. Moreover, the agency has the resources—both money and staffing—to ensure the safe operation of existing nuclear power plants and carry out its other responsibilities. By law, the NRC must recover, through fees billed to licensees, approximately 90 percent of its budget authority for FY 2009, less the amounts appropriated from the Nuclear Waste Fund for high-level radioactive waste activities and from general funds for waste incidental-to-recycling and generic homeland security activities. Fees are to be collected each year by September 30.

The agency's budget is controlled annually by legislation, and, although there will be differences of opinion in Congress that may affect the agency's budget, it is especially noteworthy that, in recent years, Congress has increased the agency's budget so that it can review the large number of new power plant applications that have been submitted to the agency. Congress' oversight and responsiveness tends to obviate the need for the sort of mechanism sometimes suggested as a way of dealing flexibly with changes in the number of applications for licenses: statutory permission for the agency to expand or contract with the number of applications, relying on user fees, and not having to go through the full budget process again.

The NRC is independent both of the entities that promote nuclear power and the entities that operate nuclear power plants. The NRC was created precisely to regulate without any admixture of promotion, and the agency has no authority to operate plants except in certain cases of war and national emergency. Moreover, NRC Commissioners serve for fixed terms, not at the pleasure of the President.

Question No: 032

Module 03: Responsibilities and functions of the Regulatory Body

Question

By what means are resources made available?

Response

(See the response to Question 015.)

Resources are made available to the NRC through enactment of appropriations by Congress. The NRC submits annual budget requests to Congress for subsequent FY funding. Once appropriated funds are provided, in accordance with the Antideficiency Act and OMB Circular A 11 requirements, the NRC maintains a system of administrative control of funds to ensure that budgetary resources are properly distributed and controlled. After an appropriation is enacted by Congress, the Office of the Chief Financial Officer (OCFO) requests an apportionment of funds from OMB. OMB's apportionment to the agency provides approval to obligate funds. The OCFO issues allotments to the Director, Division of Planning, Budget and Analysis, who in turn issues financial plans and allowances to NRC allowance holders, authorizing the commitment and obligation of funds necessary to carry out their duties. Directors of major NRC offices and regions are delegated authority to be allowance holders. NRC allowance holders have a fiduciary responsibility over funding allocated to their offices and regions. As necessary, funding is reallocated between NRC allowances and budgetary lines through a formal change request process. OCFO is responsible for the official accounting of all funds committed and obligated by allowance holders and their staffs, including the requesting of disbursements from the U.S. Treasury.

Question No: 033

Module 03: Responsibilities and functions of the Regulatory Body

Question

If the Regulatory Body consists of more than one authority, what are the arrangements in place to ensure that regulatory responsibilities and functions are clearly defined and coordinated? i.e. that undue duplication and/or omissions are avoided and that conflicting requirements are not placed on the operator.

Response

In a loose sense, the U.S. "regulatory body" in fact consists of several distinct regulators mentioned in the answers to other questions. These regulators include the NRC, EPA, FEMA, DOT, and various State government agencies working either under State authority (as, for example, public utility commissions do) or under delegated Federal authority (as most State environmental regulators do). In some cases, statute or other law assigns responsibilities so that gaps and overlaps in regulation are avoided. For example, Presidential Executive Order 12148 assigns various emergency planning authorities to FEMA and the NRC, and Reorganization Plan No. 3 of 1970 assigns responsibilities for certain environmental standards to EPA. In other cases, undue duplication or omissions are avoided by MOU among the various agencies. For example, the NRC and EPA entered into a 2002 MOU on their respective roles in the decommissioning and decontamination of NRC-licensed sites.

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Question No: 034

Module 03: Responsibilities and functions of the Regulatory Body

Question

How are the main functions of review and assessment, inspection and enforcement organized to ensure consistency and to enable the necessary feedback and exchange of information?

Response

The NRC's functions of licensing, review and assessment, inspection, and enforcement are organized to ensure consistency and to enable the necessary feedback and exchange of information. In 1975, the Atomic Energy Commission was reorganized into two Federal agencies: the U.S. Department of Energy (DOE) and its precursor, the Energy Research and Development Agency) and the NRC. DOE's role is to advance the national, economic, and energy security of the United States and to promote scientific and technological innovation in support of that mission. The NRC is the sole authority responsible for the safe operation of commercial nuclear facilities in the United States. The NRC is an independent Federal agency, and a balance of political affiliation among the Commissioners ensures relative stability in the agency's policies. As such, the NRC operates as an independent regulatory body whose mission (to protect public health and safety) is stable and constant.

The NRC's organization is structured into Headquarters-based offices that have responsibility for regulations and guides, reviews and assessment, reactor licensing, and policy and program development and regional offices that implement the inspection, enforcement, and assessment programs. Each office is staffed with personnel who possess the necessary knowledge, skills, and experience to carry out their assigned regulatory activities. The NRC's structure and composition has been adapted over the years to accommodate emerging challenges. An EDO has a support staff that ensures effective coordination of the various disciplines, roles, and responsibilities of the offices. Regional offices implement the inspection, assessment, and enforcement programs in accordance with inspection manual chapters and inspection procedures to ensure consistent oversight of reactor facilities. Additionally, regional management holds periodic counterpart meetings with regional inspectors, and regional management holds periodic phone calls and meetings with Headquarters management to identify improvements and to promote consistency.

NRR is responsible for issuing facility operating licenses; writing rules, regulations, and associated guidance documents; developing and maintaining an inspection and oversight program; collecting and disseminating domestic and international operating experience data; and providing technical expertise in radiation protection, engineering, human performance, and a number of other disciplines. NRR performs an annual review of the regional implementation of the ROP. The Office of Enforcement is responsible for developing and maintaining the NRC's enforcement policies and associated guidance. The Office of Research provides technical assets and research capabilities across varied and diverse disciplines. The NRC regional offices have the primary responsibility for the implementation of the NRC inspection program at power reactor sites within the regions' geographical areas. The regional office implements the inspection program for each reactor facility using the NRC ROP as described in IMC 2515, "Light-Water Reactor Inspection Program—Operations Phase." The resources used to complete the program are normally provided by the regional office. The regional office effort is normally supported by specialists in reactor risk assessment or by representatives from the NRC Office of Enforcement depending on the severity, significance, and complexity of an issue.

Reporting processes and communications links between the regional and Headquarters offices reinforce the information exchange. For example, the publicly accessible NRC Web page for the ROP has active links to all power reactor assessments and inspection schedules and results. The input data for the facility assessments, including inspection report information and performance indicators, is linked into those Web pages (see references). The NRC offices have shared information databases that allow the offices to be linked together and share information. These include the Office of Enforcement listing of enforcement actions, and databases for licensee event reports, human factors information, and reactor OpE. The Reactor Operating Experience gateway provides access to a wide scope of current and historical information that includes reports and trending systems. In addition, the internal feedback process, as described in IMC 0801, "Reactor Oversight Process Feedback Program," provides a useful means for the NRC staff to identify concerns or issues and recommend improvements related to ROP policies, procedures, or guidance. This closed-loop process ensures that identified issues or concerns are resolved and/or explained in order to continuously improve program effectiveness.

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Question No: 035	Module 03: Responsibilities and functions of the Regulatory Body
Question	
How are the authorities responsible for the different disciplines concerned in the regulatory process, (such as those responsible for nuclear, radiation, radioactive waste and transport safety), effectively coordinated?	
Response	
The responsibilities of each of the offices are clearly defined. MD 9.1 states that the objectives of organizational management are the following: -to assure that NRC organizational structure, assignments of functions, and delegations of authority are consistent with agency objectives -to assure that NRC organization relationships properly reflect program needs and effective staff use in light of operating experience or changing requirements -to provide clearly assigned functional responsibilities and delegations of authority -to promote the use of uniform organizational nomenclature -to assure that approved organization structure, functional assignments, and delegations of authority are recorded and issued in a timely manner The NRC offices involved in the operating reactor program (principally NRR, NSIR, and the four regional offices) have internal office instructions that ensure consistency and efficiency of staff oversight of various activities regarding operating nuclear power plants. These office instructions define the interactions, licensing program management responsibilities, and support functions for staff regulatory oversight. They describe areas of mutual support and guidance for coordination of technical reviews, rulemaking, and guidance. With regard to other Federal agencies with regulatory authority, such as EPA, FEMA, and DOT, the law is written to avoid gaps and overlaps in regulation. In some cases, the NRC enters into an MOU with the other agency to clarify each agency's duties and responsibilities.	

Question No: 036	Module 03: Responsibilities and functions of the Regulatory Body
Question	
Is the Regulatory Body entirely self-sufficient in all technical and functional areas necessary to discharge its responsibilities for review and assessment or inspection?	
Response	
The NRC is capable of completing all the technical or functional areas necessary to discharge its responsibility for review and assessment or inspection. There are times when the NRC uses expertise from DOE-operated national laboratories, commercial firms, universities, States, and other Federal agencies to supplement its own resources or to conduct specialized research or analysis that is a one-time need. In order to ensure that contractors do not have a conflict of interest, the NRC Acquisition Regulation contains provisions and standards that contractors must meet in order to conduct work for the NRC.	

Question No: 037	Module 03: Responsibilities and functions of the Regulatory Body
Question	
If not, does it seek advice or assistance from consultants who are effectively independent of the operator?	
Response	
See the response to Question 36.	

Question No: 039	Module 03: Responsibilities and functions of the Regulatory Body
Question	
How does the regulatory body ensure that its responsibility for making regulatory decisions and recommendations is not challenged by the use of consultants?	
Response	
The NRC uses consultants either when necessary to provide specialized knowledge or for efficiency in the conduct of certain reviews. As discussed under other questions, the NRC considers potential conflicts of interest when deciding to obtain the services of such consultants. The NRC remains responsible for making any regulatory decisions that may be supported by such consultant work. For example, a consultant may prepare a report on a particular body of information, typically designated with a NUREG/CR xxxx number, but it is the NRC's role to define how such reports are used in the regulatory process. As another example, a consultant may prepare a technical evaluation report (TER) on a particular topic related to an application. The NRC then prepares a safety evaluation report, providing its own conclusions regarding the matter, and describing how the information in the TER was considered by the agency in making its regulatory decision. The NRC's responses to Questions 16 and 71 may provide additional information on how the NRC maintains independence as a regulatory body.	

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Question No: 040	Module 03: Responsibilities and functions of the Regulatory Body
Question	
1) Has top management established a framework for managing and allocating resources? 2) Did top management develop a human resource plan? 3) Has it (human resource plan) been implemented and up-dated based on the scope of the regulator's responsibilities?	
Response	
1) The NRC has in place a 5-year Strategic Human Capital Plan that constitutes the framework for managing the NRC's human capital system through 2013. This plan supersedes the 2004–2009 Strategic Human Capital and Workforce Restructuring Plan, is directly linked to the Agency Strategic Plan, and is based on the Office of Personnel Management's Human Capital Assessment and Accountability Framework. The plan identifies the internal and external factors that shape human capital planning and creates an integrated framework that will guide the agency in meeting its workforce needs. The plan seeks to inform both managers and staff and takes a strategic approach in identifying human capital challenges as well as ways to best maximize the capabilities of the NRC workforce at all levels.	
2) In July 2006, the Human Capital Council (HCC) was established as an agency-level forum to formulate strategies to address human capital challenges, share best practices, and develop an integrated approach to address human capital issues. The HCC serves in an advisory capacity and makes recommendations for action to the EDO and Chief Human Capital Officer to improve the agency's management of human capital. Members should have a strong understanding of their office and agency human capital environment in order to identify issues, propose strategies and solutions, set priorities, and evaluate progress toward reaching human capital goals.	
3) The NRC employs a highly skilled workforce of approximately 4,000 permanent employees. The Commission's key occupations are engineers and scientists, attorneys, and various professional administrative occupations. The NRC's workforce has grown 33 percent over the past 5 years, an increase of 1,000 over the approximately 3,000 employees working at the agency in FY 2004.	
The NRC is challenged, much like the rest of the Federal Government, by the high number of senior experts and managers who are becoming eligible to retire. The NRC has in place a variety of human capital strategies to maintain and bolster its knowledge and skills during a period when a large number of experienced staff members are becoming eligible to retire and current and new NRC employees need the benefit of their knowledge. These strategies include a variety of knowledge management tools and techniques, judicious use of compensation flexibilities and retention incentives to keep highly skilled technical staff on board, and the use of authority gained from the Energy Policy Act of 2005 to waive dual compensation limitations for rehired annuitants with critical skills.	
The NRC uses an automated strategic workforce planning tool to capture staff competencies as well as critical skill and knowledge needs. The agency can then determine critical skill and knowledge gaps and target recruitment efforts accordingly. This information informs a vigorous and successful recruitment program.	
Question No: 041	Module 03: Responsibilities and functions of the Regulatory Body
Question	
Does the regulator have recourse to external sources of expertise? How are external sources of expertise engaged to resolve urgent problems?	
Response	
In areas where the NRC is not self-sufficient, it has access to external sources of expertise through contracts with commercial firms, nonprofit organizations, universities, States, and other Federal agencies. The NRC cannot acquire contracted services to be provided in the context of an employer-employee relationship. The NRC is also restricted from procuring services for performance of activities that are considered inherently governmental functions. Inherently, governmental functions are those functions so intimately related to the public interest as to mandate performance by government employees. These functions include activities that require either exercise of discretion in applying government authority or the application of value judgment in making decisions for the government (Pub. L. 105–270).	
The Federal Acquisition Regulation and interagency agreements allow for placement of contracts on an expedited basis, with adequate justification and approval by the agency's competition advocate and program manager, for urgent compelling requirements. For urgent reviews or special circumstances (e.g., exigent or emergency license amendment reviews), the NRC may require the external source to begin work before receiving a definitized task order from the contracting officer. Consistent with 48 CFR Chapter 20, "Nuclear Regulatory Commission," the Nuclear Regulatory Commission Acquisition Regulation, the contracting officer may insert a clause involving accelerated task order procedures to fit the circumstances of the urgent requirement.	
For each contracted effort, NRC staff develops a performance-based statement of work defining the required outcome of the effort and standards by which staff will measure performance under the contract. The NRC staff then solicits an offer, or multiple offers, and evaluates the offers received against criteria developed specifically for the work requirement. The criterion for rating external sources typically includes the caliber of the source's staff and corporate qualifications in addition to the source's past performance under other contracts.	
An NRC technical monitor and administrative project manager closely monitor the performance under the awarded contract or interagency agreement to ensure the contractor has met the objectives of the work in a satisfactory and timely manner. The NRC technical monitors and administrative project managers must have attended a prescribed training program, resulting in certification, and must maintain their certification current by periodic additional refresher training.	

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Question No: 042

Module 03: Responsibilities and functions of the Regulatory Body

Question

How many technical/professional staff are currently employed within the Regulatory Body?

How many:

Undertake review and assessment?

Response

As of May 2009, the NRC employs 2,427 technical/professional staff in the following roles: 1,915 undertake review and assessment, 402 undertake inspection and enforcement, and 110 legal staff prepare regulation and guides or are involved in other legal matters.

NRC technical/professional staff are based at the following locations: 1,643 are at Headquarters, 625 are at regional offices, 145 are at nuclear sites, and 14 are at other sites.

The NRC has adequate staffing to discharge its assigned responsibilities. The agency conducts annual reviews of the resources needed to carry out its mission, to ensure that the appropriate numbers of staff with the appropriate skills are on board. Adjustments are made throughout the year to meet scheduled workloads and to accommodate emergent work. Qualification programs are in place for specialized technical activities to ensure that staff receive appropriate training and attain required skill levels to perform their duties. Strategic workforce planning is used to anticipate future needs and to determine the agency's recruitment and training needs. In addition, staff is geographically dispersed, many at NRC regional offices or licensee sites, so that inspection, enforcement, and other regulatory activities may be carried out more effectively and efficiently. To ensure adequacy of technical staff levels and capabilities, performance goals, measures, and milestones are developed and monitored throughout the year.

Question No: 043

Module 03: Responsibilities and functions of the Regulatory Body

Question

Part 1. How does the regulator ensure that it has the equipment and facilities needed to carry out its objectives?

Part 2. How does the regulator ensure that it has adequate financial and other resources and that they are managed and employed in support of the

Response

Part 1

The NRC relies on the Offices of Administration (ADM) to provide adequate office facilities for a safe work environment, and the Office of Information Services (OIS) provides the infrastructure: information technology services and equipment, including but not limited to desktop computers, laptops, and BlackBerries, as well as maintenance support for this equipment. There are established policies, procedures, and processes in place for requesting these services (e.g., NRC management directives and NRR office instructions, FIX-IT Requests, HELP Desk Support), and there is additional oversight from NRR's Program Management, Policy Development and Analysis staff, who ensure compliance with Federal and NRC regulations (e.g., facilitating ergonomic equipment assessments and purchases), and coordinate with the principal offices. Onsite at the Headquarters facility in Rockville, Maryland, there is a fully-staffed Health Unit that provides many services to NRC staff (e.g., annual physicals based on age and job requirements, yearly flu shots, and other wellness programs). As regulators, the NRC follows detailed procedures and guidance and trains all staff accordingly at facilities in Tennessee and Maryland. NRR handles all licensing and inspection activities associated with the operation of both nuclear power reactors and research and test reactors. These activities are performed at the NRC's Headquarters facility in Rockville, Maryland, as well as at four regional offices and onsite at the licensee's facilities/operating reactors.

NRC inspectors at licensee facilities are responsible for verifying that licensees follow industry-acceptable standards for calibrating equipment. The NRC will issue a violation when the inspection finding determines that the licensee is using equipment that is out-of-calibration. However, the NRC does not independently calibrate equipment.

Part 2

Please refer to the response to Question 15 for detailed information regarding how the NRC ensures that it has adequate financial and other resources. In addition to those controls, the NRC ensures that these resources are managed and employed in support of the NRC's objectives by prioritizing program requirements during the formulation process and throughout execution. The NRC has an established fee structure for all licensees who are requesting permission to hold nuclear materials. These fees are collected by the NRC's OCFO, and the fee billing structure is commensurate with the potential magnitude and nature of the hazard to be controlled (e.g., from materials general license holders up to and including operating power reactors).

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Question No: 044

Module 03: Responsibilities and functions of the Regulatory Body

Question

- 1) How does the regulator ensure that it has adequate human resources and that they are managed and employed in support of the regulatory body's strategy and objectives?
- 2) Has the regulatory body conducted an analysis of the competencies of its staff in relation to the positions and tasks that they need to carry out?

Response

The competencies of the NRC workforce are captured through employee self-assessments and supervisor reviews (via an automated system, the Strategic Workforce Planning Self-Assessment Survey) created by NRC staff for this specific purpose. There has been a comprehensive plan of action in place since January 2001 to identify the steps the NRC needs to take to acquire, develop, maintain, deploy, and retain its core scientific, engineering, and technical human capital capacities. Since that date, there have been concerted and measured efforts to evaluate and analyze all needed skills and competencies of the NRC, to identify employee skill gaps, and to develop comprehensive strategies for closing those gaps. Furthermore, in October 2004 a Strategic Human Capital and Workforce Restructuring Plan (including a human capital implementation plan) was developed to guide the agency's efforts for the management of human capital. The plan describes objectives and strategies for addressing the agency's human capital challenges. The NRC is in the process of revising the plan for the next 5 years.

Through the use of the systematic strategic workforce planning process supported by the automated Strategic Workforce Planning (SWP) system, the NRC determines where critical skill/knowledge gaps exist based on information from budget planning assumptions and the specific needs and plans to fill the gaps expressed by offices in response to an SWP Information Call. The NRC uses that information to target workforce recruitment and other programs (e.g., training and development, grants and fellowship programs) appropriately to address those gaps and maintain the technical competence of its workforce. In addition, agency planners analyze workforce demographics, such as attrition and retirement eligibility date, on a regular basis.

The General Accounting Office (GAO) conducted a study and issued a report in 2007 that was particularly relevant to the analysis of competencies. The study examined the extent to which the NRC is effectively recruiting, developing, and retaining critically skilled personnel and taking steps to address future uncertainties that could affect its overall workforce capacity. The results of GAO's comments were generally complimentary of the NRC's work in these areas.

The NRC's use of its SWP system, including its automated employee self-assessment survey and associated reports, has been lauded by other Federal agencies and several public service organizations as one of the best practices in use by the Federal Government. In fact, in 2003 and again in 2007, the U.S. Office of Personnel Management commended the NRC as the only Federal agency that developed a strategic workforce planning model that identified and monitored its human capital assets and needs.

The SWP system uses employee skills assessment data and managers' skills need assessment data with retirement eligibility data from the agency's human resources information system for managers to make informed human capital decisions. Many of the reports available to managers and supervisors allow for analysis of employee competencies in relation to the positions and tasks that they need to carry out, and the information can be tailored in a large number of ways for different planning and strategic uses.

The original guidance that led to the creation of this site and its resources and tools is captured in an action plan developed by the Office of Human Resources in 2001 and submitted through the NRC Commissioners, SECY 01 0012, "Action Plan for Maintaining Core Competence," dated January 31, 2001. Also, available on the SWP Web site is the specific Strategic Workforce Planning Process Methodology. Workforce planning and human capital management tools (including hiring and retention flexibilities) have been collected together in an easy to locate OHR website that is readily available for all NRC employees.

As part of the efforts to ensure a proper balance of technical expertise and regulatory skills are available, NRR utilizes an extensive qualification program for new employees or those changing job categories. A wide range of training opportunities are available in both technical disciplines and regulatory processes, with training plans developed at division and branch level. Employee training needs are continually assessed so skill needs and any developing skill gaps can be closed. More details on these activities can be found in the responses to Questions 049 and 050.

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Question No: 045

Module 03: Responsibilities and functions of the Regulatory Body

Question

- 1) To what extent do the skills of permanent staff members match the needs identified by the competency profile?
- 2) Has the regulatory body completed a systematic assessment of the competencies required to carry out its activities?
- 3) Has the regulatory body put in place a training program to address gaps?

Response

1) In general, the skills and competencies of permanent staff members match well with the needs identified by the competency profile in the SWP system. The use of the system allows supervisors and managers a constant assessment of just how well employees' talents and skills match the needs of the agency. Employees self-assess (and their supervisors review) skills on an extremely broad array of disciplines with ratings made on the following scale: None, Limited, General, Applied, Extensive, and Expert.

The annual Strategic Workforce Planning and Training Needs Information Call is another valuable tool in the NRC's SWP process in that it gives the NRC a top-down look at the human capital needs of the agency and the external and internal factors that are driving those needs. To conduct the assessment and respond to the call, offices must evaluate influences and workforce demographics to assess employee competencies and determine where skill gaps exist and which strategies are most effective to address those gaps. This exercise is valuable because organizations reflect on their current and future skill needs and what resources they have available to accomplish work. This information is analyzed by OHR, and reports are developed from the information. The results of the subsequent OHR data analyses are available to assist supervisors and managers with strategic human capital management.

As mentioned in the response to Question 44, GAO conducted a study and issued a report in 2007 that was particularly relevant to the analysis of competencies. The study examined the extent to which the NRC is effectively recruiting, developing, and retaining critically skilled personnel and taking steps to address future uncertainties that could affect its overall workforce capacity. In general, the results of GAO's comments were generally complimentary of the NRC's work in these areas.

2) The NRC conducts skill assessments of the entire workforce, using its automated SWP system to inform the agency recruitment plan and to determine training needs that will increase staff proficiency levels. Specifically, the NRC models human capital needs in its workforce planning efforts in four phases: understanding of the agency's strategic direction and its workforce needs, analyzing the current state of agency resources, identifying gaps and challenges, and developing strategies and actions to address those gaps and challenges. Finally, a feedback loop assures that the results achieved by the actions will be used to inform and improve the continuous workforce planning cycle. The process provides valuable insight into the staff's skill strengths and weaknesses.

3) The NRC's strategic approach to training and development allows the agency to establish priorities and leverage investments to ensure a comprehensive, integrated, competency-based system of training for its staff. The NRC uses succession planning, training and development, and knowledge management strategies to close identified critical skill gaps and to ensure continuity of leadership. The NRC has made substantial progress in implementing a variety of initiatives and tools to create a knowledge-sharing culture including: the NRC Knowledge Center, an agency wide collection of electronic Communities of Practice designed to enable staff to collaborate, capture and share knowledge in order to build organizational memory; and an Expertise Exchange to capture the lessons learned and best practices from our most experienced staff.

Several training programs, covering various functions within the regulatory body, have been established to ensure staff is suitably qualified and experienced. For example, NRR developed a qualification program for its technical staff. The goal of the qualification program is to prepare employees to perform regulatory duties and implement the agency's policies, programs, and activities associated with the regulation of nuclear reactors. There is also a structured, disciplined "on-the-job" training associated with the inspection function. The qualification plans help ensure the staff is well versed in the regulatory framework and in agency processes, practices, and procedures relevant to their position. The staff's technical skills are also addressed through the combination of the NRC's criteria for employees' educational credentials and technical training particular to each employee's position. For each job category, there are position specific high-level qualifications. The technical qualification programs culminate in the employee going before an oral board as a final requirement of the program. Each technical division also has identified branch-specific training plans, which focus upon ensuring that employees have appropriate technical skills and knowledge. This is primarily implemented for new employees. The more basic training modules may be taken as part of the initial qualification effort, but more advanced and specialized training modules are also available, which can be tailored to an individual employee's prior background and current or future job responsibilities. The agency's dedicated Technical Training Center is also available, which provides extensive structured training in power plant design, systems, operations, and other specialized topics, including hands-on simulator training for multiple designs. As gaps in knowledge, skills, and abilities are identified, additional training modules are developed and implemented. External training opportunities are also widely available at academic institutions or at commercial facilities.

For supervisor and management positions, the NRC has a Leader Academy that includes developmental programs designed to provide eligible candidates to fill vacant leadership positions. These programs are used to prepare NRC staff for progressive leadership positions as the NRC population ages and its current leadership retires, leaving gaps in the management force. The Leadership Potential Program prepares employees to fill new team leader and supervisory positions, and the Senior Executive Service Candidate Development Program prepares supervisors for executive positions.

The NRC provides a wide variety of in-house, contracted, and online technical and professional training in the areas of reactor technology, engineering support, health physics, regulatory skills, communications, finance, acquisition, computer, and other topics. Courses are developed and conducted based on results from training needs surveys.

Furthermore, the NRC Graduate Fellowship Program develops highly qualified individuals who aspire to work in areas requiring highly specialized technical knowledge and skills. This developmental program combines a graduate education and a return to a position with the NRC that utilizes the learning gained through graduate study. The program is targeted to individuals who wish to gain highly specialized technical knowledge by undertaking

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research-intensive, full-time graduate work in a discipline identified as meeting the NRC's current or future critical skill needs.

NRC provides grants to support courses, studies, training, curricula, and disciplines pertaining to fields that are important to the work of the agency. This important effort is intended to develop the national academic infrastructure necessary to ensure a viable nuclear workforce into the future.

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Question No: 046

Module 03: Responsibilities and functions of the Regulatory Body

Question

Does the top management ensure that opportunities for career progression are available to staff?

Response

The NRC offers extensive opportunities for technical position progression, at the entry level Nuclear Safety Professional Development Program (NSPDP) and within technical specialty positions through mid-level positions. The NSPDP provides significant promotion potential, while allowing program participants to develop knowledge and experience in their areas of technical expertise. These progression opportunities allow for advancement while maintaining their primary area of technical specialty. Generally, these are categorized as “career ladder” advancements. Opportunities for senior positions are also available through a competitive selection process. Additionally, opportunities for technical staff to move to new technical areas are also encouraged through extensive training opportunities and the availability of rotational assignments, which are widely advertised throughout the agency.

Within the area of progression for senior specialists, the NRC offers advancement potential, both into the management ranks and also while remaining in areas of technical specialty.

Recognizing that developing leadership skills and potential can be an important element in career advancement, NRC has developed a strong Leaders Academy program to provide opportunities for developing leadership skills to nonsupervisors and all levels of management. The Leaders Academy includes required training for new supervisors, numerous leadership developmental programs (listed below), and support for nonsupervisory situational leaders. Some of the training opportunities are specifically identified for current nonsupervisors. First-line management is asked to encourage all staff, including senior specialists, to take advantage of the agency’s career progression opportunities. The Leaders Academy involves the Executive Resources Board for review and top management support.

The NRC recognizes that career progression for senior technical staff may not include preparing to lead people. Some senior specialists will not choose to pursue leadership positions. In the NRC, they may pursue the Senior Level Service based on their high level of technical knowledge and experience. The compensation for these positions is generally equivalent to that of the Senior Executive Service (SES) management progression track. The high compensation provided demonstrates the NRC’s commitment to retaining extremely well-qualified technical staff, while allowing them to remain in an area of technical specialty.

Some of the development programs the NRC provides (described below) ensure opportunities for career progression for all staff, which includes senior specialists.

In the Senior Executive Service Candidate Development Program, candidates compete, based on their demonstrated leadership skills and experience, to participate in a variety of developmental activities that prepares them for advancement to the SES. They complete an assessment of their competencies and design an individual development plan to use as a blueprint for the learning activities. In addition, they complete at least 80 hours of external training that addresses the SES Executive Core Qualifications and at least 4 months on rotational assignments, participate in monthly meetings and leadership briefings, and develop a group project. Candidates select a senior advisor to coach them during the 18 month program.

The Leadership Potential Program is a 12 month program to (1) prepare high-performing individuals for team leader, first-level supervisory, or other positions requiring supervisory, managerial, and leadership skills and abilities; and (2) build and maintain a diverse supervisory workforce. It includes rotational assignments, training, and teamwork.

The Team Leader Development Program is a 12 month program to develop team leaders for supervisory or other leadership positions.

The Supervisor Development Program is a 24 month program required of all supervisors within their first 2 years. All new supervisors attend supervisory training on their roles and responsibilities while in a developmental program or independently.

The Nuclear Safety Professional Development Program is a 2 year entry program for outstanding graduates entering the NRC. They participate in challenging professional assignments with broad and specialized perspectives on NRC operations, including on-the-job training, formal training, and two rotational work assignments of at least 90 days each. The program develops new engineering and sciences employees, and some new nontechnical staff. Compensation and advancement within this program was developed to make these positions competitive with opportunities available in the commercial sector.

Two programs help secretaries, office automation assistants, administrative assistants, and support staff employees obtain training and education in administrative areas and information technology. They include the Information Technology/Information Management Program and the Administrative Skills Enhancement Program. These employees receive guidance and assistance developing an individual development plan and obtaining appropriate training and developmental experiences. It is available to all administrative staff.

To develop additional staff for engineering, science, and other identified technical disciplines critical to the agency’s mission, the NRC established the Graduate Fellowship Program. The NRC designates specific sponsored disciplines in which participants may pursue advanced degrees targeted to a master’s or doctoral level. Participants receive tuition and a stipend equal to 90 percent of their salary while they complete their graduate degree at approved universities. Upon completion of their degree program, they return to the NRC to work in full-time permanent positions. This offers senior specialists, as well as more junior staff, the opportunity to prepare for another technically critical position. It also permits senior specialists to pursue additional academic degrees to further enhance their technical expertise.

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To enhance staff who can work well with the legislative process, the NRC participates in the Congressional Fellowship Program sponsored by the American Political Science Association. Selected fellows work full-time as legislative assistants in the U.S. House of Representatives or Senate for almost 1 year and receive training briefings there. For other staff, regular seminars are held on how the Congress works that include congressional speakers and observation of live hearings on Capitol Hill.

All employees are strongly encouraged to maintain an individual development plan. This is a written schedule or plan with goals and planned training and experiences for the purpose of developing needed skills and knowledge in a systematic way. All employees are encouraged to take job-relevant training (external and internal) to maintain and improve their skills and abilities whether or not they develop an individual development plan. Rather than haphazardly spending time and money on what may or may not be a useful learning experience, the individual development plan gives both the employee and his or her supervisor the opportunity to set objectives and plan the experiences that will support those objectives and career progression.

The NRC maintains a Web site and nearly daily announcements of available developmental rotational assignments to improve opportunities for those in specialist positions who wish to cross-train, gain exposure to new positions, and progress their careers. Rotations to gain experience in other areas of the organization support the technical specialists and the leadership programs. Those in formal leadership development programs must complete developmental rotations outside their immediate organizations as a part of their requirements.

The agency provides a mentoring program that all employees can use to identify a more senior person to serve as a mentor on a one-to-one basis. NRC employees may volunteer to be mentors to other staff and are trained accordingly. Although participation is voluntary, the program is successful and well utilized.

In addition to the more formal initiatives, attention to employees—their needs, interests, and development—is strongly supported by first-line supervisors through coaching and listening. This is emphasized in the supervisory training, developmental programs, and top management communications to supervisors. Regular communication of the agency's mission, values, strategic goals, and operating plans by management is intended to keep the staff mission-engaged and motivated.

Question No: 047

Module 03: Responsibilities and functions of the Regulatory Body

Question

Are there other technical / professional staff regularly undertaking work for the Regulatory Body?

Response

As of May 2009, the NRC employed 2,427 technical/professional staff in the following roles: (1) 1,915 undertake review and assessment activities, (2) 402 undertake inspection and enforcement activities, and (3) 110 legal staff prepare regulation and guides or are involved in other legal matters. The NRC has adequate staffing to discharge its assigned responsibilities. The agency conducts annual reviews of the resources needed to carry out its mission, to ensure that the appropriate numbers of staff with the appropriate skills are on board. However, should circumstances arise where staff is insufficient in either resources or skills, the NRC as a regulatory body has both the authority and the means to obtain technical and professional staff to undertake its work.

The NRC uses primarily four methods to obtain external resources. First, the NRC engages the assistance of external sources of expertise through contracts with commercial firms, nonprofit organizations, universities, and other Federal agencies. Contract support has been a traditional means of providing needed expertise and support to supplement the work done by staff as well as to procure services to fulfill short- and long-term skills gaps in areas such as technical research, information technology infrastructure development and maintenance, and human resources, among many others. For example, support for research projects may be procured through contractor services, including interagency agreements with DOE for placement and monitoring of work with DOE contractor-operated laboratories. Also, the Federal acquisition regulations and interagency agreements allow for placement of contracts on an expedited basis, with adequate justification and approval by the agency's competition advocate and program manager, for urgent compelling requirements.

Second, the NRC employs consultants to provide specialized opinions or professional or technical advice that is not available within the NRC. Consultants do not supervise mission-related functions, and precautions are taken to ensure that consultants are independent of the licensee.

Third, the NRC hires annuitants to work on specialized projects and/or to facilitate its knowledge management efforts. Typically, a rehired annuitant's pay is reduced (offset) by the amount of his or her annuity received during the period of employment. Under the Energy Policy Act of 2005, the NRC was given the flexibility to rehire retired Federal employees with a pension offset waiver, that is, not reduce the annuitant's pay by the amount of the annuity. Rehired annuitants hired with a pension offset may also be hired as consultants. The type of appointment is determined by the type of work to be performed.

Finally, the NRC is also legally permitted to seek expert opinion through a formal advisory committee. The Advisory Committee on Reactor Safety (ACRS) serves as an independent advisory body to the NRC. The Committee reviews and advises the Commission on the licensing and operation of nuclear facilities. For example, the ACRS provides advice on related safety issues, proposed reactor safety standards, technical and policy issues related to the licensing of passive plant designs, and other matters related to the Commission.

IRRS Question and Response Report

Question No: 048

Module 03: Responsibilities and functions of the Regulatory Body

Question

How has it been established that this is sufficient for the Regulatory Body to fulfill its functions and responsibilities?

Response

The technical expertise of its staff forms the underpinnings of the NRC's success in performing its regulatory safety mission. Carefully assessing the necessary skill sets and staffing levels to meet that mission is an integral part of the process the NRC utilizes to perform its mission. The NRC has determined that its permanent staff, as appropriately supplemented, is sufficient to undertake its regulatory functions and responsibilities. As previously described in response to Question 47, the NRC has in place mechanisms to supplement needed expertise and skills through, for example, the hiring of consultants, entering into interagency details, and procuring contractor services. In addition, the NRC has the flexibility to rehire retired Federal employees to work on specialized projects and/or facilitate its knowledge management efforts. This flexibility is enhanced by the NRC's authority to approve pension offset waivers.

Hiring needs are determined based, in part, on the forecasts set out in the NRC's 5 year strategic plan, which serves as the foundation for each office's operating plan. (See, for example, the NRC's Strategic Plan for Fiscal Years 2008–2013; and the NRC's Information Technology/Information Management (IT/IM) Strategic Plan.)

The competencies of the NRC workforce are captured through employee self-assessments and supervisor reviews, via an automated system (the SWP Self-Assessment Survey) created by NRC staff for this specific purpose. There has been a comprehensive plan of action in place since January 2001 to identify the steps the NRC needs to take to acquire, develop, and retain its core scientific, engineering, and technical human capital capacities. Since that date, there have been concerted and measured efforts to evaluate and analyze all needed skills and competencies of the NRC, to identify employee skill gaps, and to develop comprehensive strategies for closing those gaps. Furthermore, in October 2004 a Strategic Human Capital and Workforce Restructuring Plan (including a human capital implementation plan) was developed to guide the agency's efforts for the management of human capital. The plan describes objectives and strategies for addressing the agency's human capital challenges.

Through the use of the systematic strategic workforce planning process supported by the automated SWP system, the NRC determines where critical skill/knowledge gaps exist based on information from budget planning assumptions and the specific needs and plans to fill the gaps expressed by offices in response to an SWP information call. The NRC uses that information to target workforce recruitment and other programs (e.g., training and development, grants and fellowship programs) appropriately to address those gaps and maintain the technical competence of its workforce. In addition, agency planners analyze workforce demographics, such as attrition and retirement eligibility date, on a regular basis. In general, the skills and competencies of permanent staff members match well with the needs identified by the competency profile in the SWP system.

IRRS Question and Response Report

Question No: 049

Module 03: Responsibilities and functions of the Regulatory Body

Question

- 1) How does the regulatory body establish that the staff working for it are suitably qualified and experienced?
- 2) What qualifications and experience are required to undertake; Review and assessment?
- 3) Inspection and enforcement?

Response

The NRC is committed to its mission to license and regulate the Nation's civilian use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, promote the common defense and security, and protect the environment. As part of that commitment, the agency ensures that there is a sufficient number of trained, experienced, professional staff to fulfill its statutory obligations. For example, in NRR, senior managers meet on a regular basis with NRR's Human Capital staff to identify skill gaps within the organization and allocate the available FTE to make sure that a sufficient number of trained, experienced professional staff are on-board. To ensure a pipeline of qualified staff, the NRC recruits and hires recent college graduates as well and pairs them with experienced staff.

The NRC uses a variety of resources in its recruitment process to ensure a qualified pool of candidates. For example, the agency advertises vacancies via the Internet, recruitment activities at universities throughout the United States, association conferences, as well as newspapers and technical journals. The Office of Human Resources works with the program offices to target the appropriate media in which to advertise vacancy announcements.

Through the NRC's merit staffing process, applicants are selected after careful review and consideration of their qualifications, experience, and answers to questions before and during interviews that will help determine their suitability for the position to which they are applying and to the agency as a whole. Depending on the position, the technical areas for which NRC recruits the majority of its technical staff are engineers (e.g., nuclear, mechanical, electrical, materials, and chemical) and scientists (e.g., physics, health physics, volcanologists, and geologists). The technical qualifications and experience required are also dependent on the level of the position being filled.

Once brought on board because of their qualifications and experience (or, for new graduates, their potential), new staff members are then expected to continue learning through various programs developed within the agency and outside sources. Several training programs, covering various functions within the regulatory body, have been established to ensure that staff is suitably qualified and experienced. For example, NRR developed a qualification program for its technical staff. For each job category (i.e., technical reviewer, project manager), there are position-specific qualifications. The technical qualification programs culminate in the employee going before an oral board as a final requirement of the program. The goal of the qualification program is to prepare employees to perform regulatory duties and implement the agency's policies, programs, and activities associated with the regulation of nuclear reactors. The qualification plans will help ensure that staff members are well versed in the regulatory framework and in agency processes, practices, and procedures relevant to their position, including selected technical material. The qualification plans are not specifically intended to ensure or validate all the staff's technical skills. The staff's technical skills are also addressed through the combination of the NRC's criteria for employees' educational credentials and technical training particular to each employee's position. For the administrative training program, after completing the required training, staff members meet with their supervisors to discuss what they've learned. Each division has also identified branch-specific training plans, which focus upon the technical skills and knowledge relevant to each branch's area of technical responsibility. These are not explicit training recipes, but rather a menu of job-specific training resources that can be customized depending on an individual employee's background, experience, and preparation. These programs are especially useful for new employees joining the agency or specialists who are transferring into a new technical discipline.

A qualification program was developed for inspectors performing activities in NRR programs (NRC IMC 1245). It establishes the requirements for completing refresher and continuing training as a means for updating and maintaining qualification, and establishes the requirements and defines the process for evaluating the effectiveness of the inspector training and qualification process. The program ensures that inspectors and operator licensing examiners have the necessary knowledge and skill to successfully implement NRR programs and ensures that the inspector training and qualification program remains effective in preparing inspectors to implement the inspection program.

The NRC developed the Nuclear Safety Professional Development Program for those who join the agency within 2 years of graduating with a bachelor's, master's, or doctoral degree and strong academic records in health physics, earth sciences, or engineering. This 2 year developmental program gives participants on-the-job training, formal classroom training, and rotational assignments in order to obtain an understanding of not only their technical area, but of the agency as a whole, and should prepare them for their future tasks.

Finally, in keeping with its policy that all employees should have a training plan to facilitate gaining the knowledge and skills necessary to perform effectively in their jobs, NRR also developed training programs for both new and administrative staff. For employees new to the agency, the NRR New Employee Orientation and Training Guide details training focused on learning basic agency and office policy and procedures. The Administrative Training Program includes coursework, study activities, and reading materials to assist administrative staff in obtaining general knowledge of the NRC and NRR, combined with detailed knowledge of the core skills for their specific jobs. This program builds on the agency's Secretarial Qualification Program.

Training does not end upon completing the qualification program requirements. To ensure staff has the most up-to-date information on regulatory and industry changes, refresher training is offered on an as-needed basis after discussions between the employee and his or her supervisor. Training beyond the scope of current training plans is also identified on a continual basis according to the needs and technical responsibilities of individual staff. Refresher training may be provided within the NRC's training facilities (the Professional Development Center and the Technical Training Center), at universities, and through industry- or specialist-provided training. Training opportunities and needs of individual staff are continually assessed. Training programs in NRR are updated on a regular basis to ensure staff is kept informed of any changes within the industry. Many of the training programs, including videos, and their requirements are uploaded to the internal Web site to ensure access by all staff.

IRRS Question and Response Report

Question No: 050

Module 03: Responsibilities and functions of the Regulatory Body

Question

How does the Regulatory Body ensure that it maintains the competence to judge, on an overall basis, the safety of facilities and activities?

Response

The NRC is a learning organization with a focus on continuous improvement. Therefore, training is of utmost importance at all levels within the agency. The NRC has a Training and Development Strategic Plan in order to implement an agencywide strategic and businesslike approach to training and development activities. A strategic approach allows the NRC to better establish priorities and leverage investments in training and development to achieve agency results. Appropriate investments in recruitment, training, development, and knowledge management will reward the NRC with a highly skilled and diverse workforce prepared to address the challenges ahead.

The NRC Program Review Committee, comprised of senior executives, reviews and prioritizes training budget requests to ensure that resources are adequate to support the agency's goals and strategies.

A strong, motivated leadership is fundamental to the success of any organization. The NRC has a well-established system of training courses and developmental programs for its current and future leaders. This includes required training courses for new supervisors and team leaders, the Team Leader Development Program and Leadership Potential Program for aspiring new supervisors, the Senior Executive Service Candidate Development Program for aspiring executives, and Executive Leadership Seminars for continuing learning opportunities for NRC leaders. The NRC Executive Resources Board oversees the agency's leadership training and development programs to ensure that these programs are consistent with the agency's strategic goals and meet agency needs.

In order to ensure that staff is familiar with the technology at the various plants and research and testing facilities it regulates, the NRC created the Technical Training Center, which houses nuclear reactor simulators and, with input from the program offices, develops and teaches numerous technical training courses.

When the agency does not have the facilities or expertise in-house, it utilizes the facilities and expertise of outside entities (e.g., the Center for Nuclear Waste Regulatory Analysis, which is part of the Department of the Geosciences and Engineering Division of Southwest Research Institute) as appropriate.

Although the above responds to the agencywide focus on training, please refer to the answer in Question 049 regarding the training programs in organizations within the agency.

Question No: 051

Module 03: Responsibilities and functions of the Regulatory Body

Question

How does the Regulatory Body ensure that its staff acquires and maintains the relevant competencies? Describe what education and training program the regulatory body has for its technical and professional staff?

Response

Please refer to the answers to Questions 049 and 050, where the NRC's commitment to training and development of staff is extensively documented.

Question No: 052

Module 03: Responsibilities and functions of the Regulatory Body

Question

How does this training program ensure that staff is aware of technological developments and new safety principles and concepts?

Response

Refer to the responses to Questions 049 and 050 regarding training. It is noteworthy to emphasize that the NRC's commitment to training is well demonstrated by its dedicated Technical Training Center, employee qualification programs, and the continual assessment of employee training and development needs as part of their yearly performance reviews.

With respect to maintaining its effective independence and ensuring that during interactions with interested parties there is a clear separation from organizations or bodies charged with the promotion or application of nuclear or radiation-related technology, NRC Manual Chapter 1201 provides a standard of conduct that must be followed by NRC employees who are involved in the inspection program. Employees must be attentive to the high standards of integrity expected in all their activities, personal or official, and conduct themselves in a manner to create and maintain public respect for the NRC and the U.S. Government. The standards of conduct regulations provide that employees take appropriate steps to avoid even an appearance of loss of impartiality in the performance of their official duties.

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Question No: 053

Module 03: Responsibilities and functions of the Regulatory Body

Question

How does the Regulatory Body ensure that it has sufficient 'in-house' expertise so that its safety assessments and judgments are not based solely on the work of consultants, or on relying on the work presented to it by the operator?

Response

The NRC has determined that its permanent staff, as appropriately supplemented, is sufficient to undertake its regulatory functions and responsibilities. The NRC has in place mechanisms to supplement needed expertise and skills through, for example, the hiring of consultants, entering into interagency details, and procuring contractor services. The NRC is committed to its mission to license and regulate the Nation's civilian use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, promote the common defense and security, and protect the environment. As part of that commitment, the agency ensures that there is a sufficient number of trained, experienced, professional staff to fulfill its statutory obligations. For example, in NRR, senior managers meet on a regular basis with NRR's Human Capital staff to identify skill gaps within the organization and allocate the available FTE to make sure a sufficient number of trained, experienced professional staff are on board. To ensure a pipeline of qualified staff, the NRC recruits and hires recent college graduates as well, and pairs them with experienced staff.

The NRC ensures that it has sufficient 'in-house' expertise through various continuous training and learning programs developed within the agency and outside sources. Several training programs, covering various functions within the regulatory body, have been established to ensure that staff is suitably qualified and experienced. For example, NRR developed a qualification program for its technical staff. The goal of the qualification program is to prepare employees to perform regulatory duties and implement the agency's policies, programs, and activities associated with the regulation of nuclear reactors. The qualification plans will help ensure that staff members are well versed in the regulatory framework and in agency processes, practices, and procedures relevant to their position. The qualification programs are not intended to ensure or validate all of the staff's technical skills. The staff's technical skills are addressed through the combination of the NRC's criteria for employees' educational credentials and technical training particular to each employee's position.

The NRC is a learning organization with a focus on continuous improvement. Therefore, training is of utmost importance at all levels within the agency. The NRC has a Training and Development Strategic Plan in order to implement an agencywide strategic and businesslike approach to training and development activities. A strategic approach allows the NRC to better establish priorities and leverage investments in training and development to achieve agency results.

Appropriate investments in recruitment, training, development, and knowledge management will reward the NRC with a highly skilled and diverse workforce prepared to address the challenges ahead. The information obtained from employee skills self-assessment surveys and projections by NRC managers on skill needs are factored into the NRC's training and recruitment strategies.

The NRC's numerous recruitment, training, development, and knowledge management programs are aligned to the agency's SWP process. Employees and supervisors share the responsibility for ensuring that staff members have the knowledge, skills, and competencies to effectively perform their job functions. Offices and regions support this effort by defining knowledge, skills, and competencies for job functions, identifying training needs, establishing and maintaining qualification programs, and ensuring that staff members are adequately trained and qualified to perform their assigned duties.

IRRS Question and Response Report

Question No: 054

Module 03: Responsibilities and functions of the Regulatory Body

Question

How does the regulatory Body ensure that it maintains sufficient expertise of its own staff to either perform regulatory reviews directly, or indirectly, by evaluating the work of consultants?

Response

The NRC has determined that its permanent staff, as appropriately supplemented, is sufficient to undertake its regulatory functions and responsibilities. The NRC has in place mechanisms to supplement needed expertise and skills through, for example, the hiring of consultants, entering into interagency details, and procuring contractor services. The NRC is committed to its mission to license and regulate the Nation's civilian use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, promote the common defense and security, and protect the environment. As part of that commitment, the agency ensures that there is a sufficient number of trained, experienced, professional staff to fulfill its statutory obligations. For example, in NRR, senior managers meet on a regular basis with NRR's Human Capital staff to identify skill gaps within the organization and allocate the available FTE to make sure a sufficient number of trained, experienced professional staff are on board. To ensure a pipeline of qualified staff, the NRC recruits and hires recent college graduates as well, and pairs them with experienced staff.

In undertaking its own review and assessment of a safety submission presented by applicants and licensees, the NRC does not rely solely on any safety assessment performed for it by consultants or conducted by the applicant or licensee. All consultant work is monitored and reviewed by one or more NRC employees. A project manager is assigned to ensure the terms of the contract are fulfilled by the consultant. Additionally, an NRC technical monitor is assigned to review the technical work of the consultant. Project managers require specialized training and routine training refreshment to maintain certification.

The NRC ensures that it has sufficient in-house expertise through various continuous training and learning programs developed within the agency and outside sources. Several training programs, covering various functions within the regulatory body, have been established to ensure that staff is suitably qualified and experienced. For example, NRR developed a qualification program for its technical staff. The goal of the qualification program is to prepare employees to perform regulatory duties and implement the agency's policies, programs, and activities associated with the regulation of nuclear reactors. The qualification plans will help ensure that staff members are well versed in the regulatory framework and in agency processes, practices, and procedures relevant to their position. The qualification plans are not intended to ensure or validate the staff's technical skills. The staff's technical skills are addressed through the combination of the NRC's criteria for employees' educational credentials and technical training particular to each employee's position.

The NRC is a learning organization with a focus on continuous improvement. Therefore, training is of utmost importance at all levels within the agency. NRC has a Training and Development Strategic Plan in order to implement an agencywide strategic and businesslike approach to training and development activities. A strategic approach allows the NRC to better establish priorities and leverage investments in training and development to achieve agency results.

Appropriate investments in recruitment, training, development, and knowledge management will reward the NRC with a highly skilled and diverse workforce prepared to address the challenges ahead by making its SWP process a top priority to support human resources allocation decisions around the Commission's planning, budgeting, and performance management process. The process ensures that the net technical capability of the NRC is maintained. The SWP process is intended to identify the core and technical capacity (i.e., knowledge, skills, and other attributes, including proficiency with technology, other tools, and foreign languages) employees must possess to perform activities and deliver products and services to support current and future strategic goals.

The NRC's SWP process involves (1) performing assessments of its current technical capacity (e.g., employee's completion and supervisory reviews of skills self-assessment surveys), (2) identifying competencies (e.g., knowledge and skills) needed to achieve mission requirements, and (3) designing workforce strategies to address the gaps between current capacity and projected needs.

The information obtained from employee skills self-assessment surveys and projections by NRC managers on skill needs are factored into the NRC's training and recruitment strategies.

The NRC's numerous recruitment, training, development, and knowledge management programs are aligned to the agency's SWP process. Employees and supervisors share the responsibility of ensuring that staff members have the knowledge, skills, and competencies to effectively perform their job functions. Offices and regions support this effort by defining knowledge, skills, and competencies for job functions, identifying training needs, establishing and maintaining qualification programs, and ensuring that staff members are adequately trained and qualified to perform their assigned duties.

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Question No: 055

Module 03: Responsibilities and functions of the Regulatory Body

Question

Does the Regulatory Body or Government use Advisory Bodies?

Response

The NRC makes wide use of advisory committees to enhance its regulatory process. The advice provided by the committees, however, is not binding and does not relieve the NRC of its responsibility to make regulatory decisions. All committee reports are published and made publically available, unless the reports meet one of the exemptions under the Freedom of Information Act. The members of the NRC's advisory committees always act as a group and not as individual experts providing an opinion. The committees are governed by the Federal Advisory Committee Act, which is implemented through NRC regulations at 10 CFR Part 7, "Advisory Committees." In 10 CFR Part 7, the NRC defines the policies and procedures to establish, utilize, and terminate advisory committees.

There are several advisory committees interface with NRC processes, but only the ACRS is established as a statutory Committee. A 1957 amendment to the Atomic Energy Act of 1954 established the Committee to advise the Atomic Energy Commission, the licensing body. The functions of the Committee are described in Sections 29 and 182b of the AEA. The Energy Reorganization Act of 1974 transferred the Atomic Energy Commission's licensing functions to the NRC, and the Committee has continued serving the same advisory role to the NRC that it did for the Atomic Energy Commission.

The ACRS is composed of a maximum 15 members that have both broad and specific technical expertise in areas, for example, such as probabilistic risk assessment, thermal hydraulics, and materials science. Members generally have years of experience and come from national laboratories, universities, other branches of the Federal Government, or performed former service with the nuclear industry. The Committee is supported by a full-time group of technical experts and administrative staff. ACRS members are appointed by the Commission and serve up to 4 years. Appointments can be renewed by the Commission at its discretion. Membership is generally considered based on the Committee's technical needs and the technical balance within the Committee.

The primary mission of the ACRS is to provide the Commission with independent and timely technical advice on issues of public safety related to the generation of nuclear power and use of nuclear materials. The independence of the advice is ensured by the statutory foundation of the ACRS, by the quality of appointments to the Committee, and through by-laws and regulations ensuring that the proceedings of such groups are open to public view. By-laws and regulations were designed to also ensure that members do not face conflict-of-interest concerns. ACRS operational practices encourage the public, industry, State and local governments, and other stakeholders to express their views on regulatory matters. The most valuable function of the ACRS is to uncover issues or needs not previously recognized by the Commission or NRC staff. The Committee reviews a broad spectrum of engineering disciplines and subjects, including power reactor and fuel cycle facility license applications, safety-significant NRC regulations and guidance related to nuclear facilities, external hazards at proposed or existing reactor sites, reactor safety standards, reactor safety research projects and programs, and other technically related topics important to the safe operation of nuclear facilities or use of nuclear materials. On its own initiative, the ACRS may review any subject matter related to nuclear power production that it finds potentially important to public health and safety. There are also statutory review requirements in the enabling legislation that mandates ACRS review of certain matters, for example, new reactor licenses or construction permits. In addition, the ACRS recently subsumed the former Advisory Committee on Nuclear Waste and Materials function into its scope and responsibilities. This expanded ACRS responsibilities to programs and issues associated with industrial uses of nuclear materials, disposal of radioactive waste, and health physics.

The ACRS also advises the Commission on safety-significant policy issues and performs other duties as the Commission may request. Upon request from DOE, the ACRS provides advice on U.S. Naval reactor designs and hazards associated with DOE's nuclear activities and facilities. Also upon request, the ACRS provides technical advice to the Defense Nuclear Facilities Safety Board. The Committee provides its advice both orally at meetings with the Commission, regulatory staff, and associated stakeholders, or as letter reports that then document ACRS observations and recommendations.

Two other advisory committees interface with the NRC's regulatory process and are mentioned here for completeness: the Advisory Committee on the Medical Uses of Isotopes (ACMUI) and the Licensing Support Network Advisory Review Panel (LSNARP). Both are nonstatutory committees created by the Commission and are outside the operating power reactor program. ACMUI members are composed of health care professionals from various disciplines, appointed by the Director of the Office of Nuclear Material Safety and Safeguards, and are based on recommendations of a screening panel after consultation with the Commission. ACMUI provides advice on medical uses of radioactivity, including medical use of byproduct material for diagnosis and therapy. The LSNARP is composed of representatives from the NRC, State of Nevada, DOE, the affected units of local government in Nevada, the National Congress of American Indians, the Nevada Nuclear Waste Task Force, and a coalition of industry groups. LSNARP members are appointed by the Secretary of the NRC and advise the NRC's Office of the Secretary and the Licensing Support Network Administrator on electronic information system of records and documents relating to the licensing of a geologic repository for the disposal of high-level radioactive waste. The committees are formalized by Commission-approved charters, and the operations of the committees are governed by the Federal Advisory Committee Act and implementing regulations in 10 CFR Part 7.

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Question No:	056	Module 03: Responsibilities and functions of the Regulatory Body
Question		
Are Advisory Bodies a legal requirement? If not, how are they formalized and who appoints them?		
Response		
Although the NRC makes use of advisory committees, only the ACRS is mandated by statute. Its establishment is required by Section 29 of the AEA. Two other advisory committees that are outside the power reactor program were established as discretionary committees by the Commission: ACMUI and LSNARP. ACMUI members are appointed by the Director of the Office of Nuclear Material Safety and Safeguards, based on recommendations of a screening panel, after consultation with the Commission. New LSNARP members are appointed by the Secretary of the NRC. The committees are formalized by Commission-approved charters, and the operations of the committees are governed by the Federal Advisory Committee Act and implementing regulations in 10 CFR Part 7. (See the response to Question 055 for more detail.)		
Question No:	057	Module 03: Responsibilities and functions of the Regulatory Body
Question		
Are the Advisory Bodies permanent or temporary?		
Response		
The NRC uses three advisory committees, but only one, the Advisory Committee on Reactor Safeguards (ACRS), is mandated by statute and permanent. (See the response to Question 55)		
Question No:	058	Module 03: Responsibilities and functions of the Regulatory Body
Question		
What is the composition of the Advisory Committees?		
Response		
As discussed in the response to Question 55, the Advisory Committee on Reactor Safeguards (ACRS) is composed of up to 15 members having expertise that is both broad and specific to a particular discipline. ACMUI is composed of health care professionals from various disciplines, and LSNARP is composed of representatives of the NRC, State of Nevada, DOE, the affected units of local government in Nevada, the National Congress of American Indians, the Nevada Nuclear Waste Task Force, and a coalition of industry groups.		
Question No:	059	Module 03: Responsibilities and functions of the Regulatory Body
Question		
Is the advice they give independent?		
Response		
The agency's advisory committees have a long history of providing advice that is independent of the Commission. (See the response to Question 55.) All of the Federal Government's advisory committees are subject to oversight by the Federal General Services Administration, under standards in Section 7 of the Federal Advisory Committee Act.		
Question No:	060	Module 03: Responsibilities and functions of the Regulatory Body
Question		
To whom do the Advisory Bodies give advice?		
Response		
As discussed in response to Question 55, the ACRS provides advice to both the Commission and the NRC staff. Additionally, with the consent of and under appropriate supporting arrangements with the NRC, the ACRS may also advise the Defense Nuclear Facilities Safety Board and, upon request by the DOE, also advise the DOE on hazards of DOE nuclear activities and facilities. ACMUI provides advice on medical uses of radioactivity to NRC staff, and LSNARP advises the NRC's Office of the Secretary and the Licensing Support Network Administrator. NRC advisory committee members always act as a group and not as individual experts providing an opinion.		

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Question No: 061	Module 03: Responsibilities and functions of the Regulatory Body
Question	
How binding upon the Regulatory Body is the advice given?	
Response	
The advice provided by NRC advisory committees is not binding; it is strictly advisory. (For additional details, see the response to Question 055.)	
Question No: 062	Module 03: Responsibilities and functions of the Regulatory Body
Question	
Does the advice given in any way relieve the Regulatory Body of its responsibilities to make decisions and recommendations?	
Response	
As discussed in response to Question 055, the advice given by the NRC advisory committees to the agency does not relieve the NRC in any way of its responsibilities to make decisions and recommendations. This responsibility is reflected in statute. Section 101 of the AEA requires that only the Commission has authority to issue licenses relating to atomic energy. Also, Section 9(b) of the Federal Advisory Committee Act says, "Determinations of action to be taken...with respect to matters upon which an advisory committee...makes recommendations shall be made solely by...an officer of the Federal Government."	
Question No: 063	Module 03: Responsibilities and functions of the Regulatory Body
Question	
Are reports of the Advisory Body published?	
Response	
All reports of the NRC advisory committees are published unless the reports meet one of the exemptions under the Freedom of Information Act.	
Question No: 064	Module 03: Responsibilities and functions of the Regulatory Body
Question	
In the opinion of the Regulatory Body, how good is their relationship with the operator? Is it frank and open yet formal?	
Response	
The NRC maintains good a relationship with its licensees, in that the relationship is both formal and open and candid. The NRC formally issues its regulatory products (e.g., rules, guidance, amendments, licenses, exemptions, inspection reports), yet NRC personnel maintain frequent contact with licensee personnel, which allows for more candid discussion in a formal setting. This is particularly so with the project managers who are stationed in NRC headquarters and the resident inspectors who are assigned to various nuclear facilities. These personnel are able to perform their functions objectively, in an official capacity, and yet maintain open and frequent day-to-day interactions with licensee personnel.	
It is the policy of the NRC to rotate resident inspectors after completing a tour of 7 years at a facility (utility). The reasons are to achieve the advantages of providing for a periodic "new perspective" or "fresh look" by the NRC's onsite representative, to provide the opportunity to utilize the experience of the departing resident inspectors elsewhere in the NRC, and to give added assurance that the objectivity of the resident inspectors is maintained.	

IRRS Question and Response Report

Question No: 065

Module 03: Responsibilities and functions of the Regulatory Body

Question

In the opinion of the Operator, how good is their relationship with the Regulatory Body? What does the Regulatory Body do to foster a frank, open and yet formal relationship with the operator?

Response

Although the NRC, as a Federal agency, cannot speak for any licensee, the NRC does have regulations and instructions on trying to maintain an open and formal relationship with each licensee.

At any time, the licensee can call and arrange a drop-in meeting with the Commissioners, the EDO, division directors, and others. These drop-in visits are an opportunity for new licensee high-level management personnel to come and meet the Commissioners personally and briefly discuss high-level issues. NRR Office Instruction COM 202, "Meetings with Applicants, Licensees, Interveners, Vendors or Other Members of the Public," covers all interactions, formal and less than formal, with the licensees, and OEDO Procedure 0240, "Briefing Packages," covers the process for preparing drop-in packages.

The licensee is also able to request a public meeting with the NRC to discuss technical issues or upcoming or ongoing issues at their sites. This process is covered in NRR Office Instruction COM-203, "Informal Interfacing and Exchange of Information with Licensees and Applicants." As delineated in NRR Office Instruction COM 202, NRR has a well-established process for conducting formal meeting with the licensee, industry representatives, and the public. The NRC has had a formal policy regarding open meetings since 1978. The policy has been revised periodically, most recently on May 28, 2002 (67 FR 36920). The latest revision continues the NRC's longstanding practice of providing the public with substantial information on its activities and of conducting business in an open manner, while balancing the need for the NRC staff to exercise its regulatory and safety responsibilities without undue administrative burden. There are three different public meeting categories:

Category 1

Description—Meetings in this category are typically held with one licensee, vendor, applicant, potential applicant, or petitioner to discuss particular regulatory issues regarding a specific facility, certificate of compliance, license, or license application.

Meeting Purpose—The purpose of this type of meeting is to discuss one particular facility or site, or certified system or device, with an applicant or licensee regarding, for example, technical issues in an application, licensee actions, or inspection results. At this type of meeting, the NRC anticipates that the public will obtain factual information to assist in its understanding of the applicable regulatory issues and NRC actions.

Level of Public Participation—The NRR staff member conducting the meeting should invite the public to observe the meeting and give the public the opportunity to communicate with the NRR staff after the business portion of the meeting but before the meeting is adjourned. This does not preclude the licensee, vendor, or applicant from responding to questions if he or she chooses to do so.

For Category 1 meetings longer than 2 hours, one or more opportunities should be considered for the public to ask questions before the end of the meeting, if practicable. Otherwise, the NRR staff will remain available to answer questions after the business portion of the meeting has been completed but before the meeting is adjourned. In advance of the meeting, members of the public may request, via e-mail or telephone, that the meeting coordinator consider changing the meeting to a Category 2 meeting (discussed below), depending on the level of public interest in the activity being discussed. Meetings that the NRR staff believes will generate high public interest should also provide more than one opportunity for public comments and questions. The decision on whether or not to change the category of any particular meeting is a matter left to the discretion of the NRR staff on a case-by-case basis.

Examples—Examples of this type of meeting include meetings held on licensing actions (or applications), renewals and amendments, or new facilities.

Category 2

Description—Meetings in this category are typically held with a group of industry representatives, licensees, vendors, or nongovernmental organizations.

Meeting Purpose—The purpose of this type of meeting is for NRR to obtain feedback from the regulated community and other external stakeholders on issues that could potentially affect more than one licensee. At this type of meeting, the public is expected to obtain factual information and provide the agency with feedback on the analysis of the issues and alternatives or on decisions.

Level of Public Participation—The NRR staff member should invite the public to discuss regulatory issues with the agency at designated points identified on the agenda. Generally, there will be more opportunities provided for the public to ask questions and provide comments at a meeting of this type than at a Category 1 meeting.

Examples—This type of meeting includes meetings of task forces and industry groups (such as the Nuclear Energy Institute and owners' groups) and public interest and citizen group discussions that focus on issues that could apply to several facilities, such as plant system aging, license renewal, decommissioning, or spent fuel storage.

Category 3

Description—This type of meeting is held with representatives of nongovernmental organizations, private citizens or interested parties, or various businesses or industries (other than those covered under Category 2) to fully engage them in a discussion on regulatory issues.

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Meeting Purpose—The purpose of this type of meeting is to maximize discussions with the public to ensure that the public’s issues and concerns are presented, understood, and considered by the NRC. It is anticipated that the public will work with the agency to facilitate the widest exchange of information, views, concerns, and suggestions with regard to license-specific or generic regulatory issues.

Level of Public Participation—The NRR staff member conducting the meeting should actively seek public participation at this type of meeting, which has the widest participation opportunities and should be specifically tailored for the public to comment and ask questions throughout the meeting.

Examples—Examples are town hall or roundtable discussions, environmental impact statement scoping meetings, workshops, the Regulatory Information Conference, or proposed rulemaking meetings.

The public will be notified of the category of the meeting, and thereby the level of participation to be anticipated, via the NRC's Public Meeting Notice System on its Web site.

With respect to the NRC’s operating reactor inspection program, the ROP, the protocol for facilitating frank and open discussions can be found in various NRC documents. All qualified NRC inspectors must complete actions required by IMC 1245, “Qualification Program for Operating Reactor Programs,” and IMC 1245, Appendix A, “Basic-Level Training and Qualification Journal.” Individual Study Activity (ISA) 3, “Inspector Objectivity, Protocol, and Professional Conduct,” of Appendix A to IMC 1245 identifies the curriculum of study for new inspectors to learn the agency’s formal protocols and expectations with regard to communication with licensees. Several formal documents are referenced by ISA 3, including: IMC 0102, “Oversight and Objectivity of Inspectors and Examiners at Reactor Facilities,” MD 7.5, “Ethics Counseling and Training,” IMC 1201, “Conduct of Employees,” NUREG/BR 0075, “Field Policy Manual,” Revision 4, Policy No. 10, “Conduct of Employees,” and NUREG/BR-0075, “Field Policy Manual,” Revision 4, Policy No. 13, “Witnessing Unsafe Situations.” In addition, NRC regional offices often publish their own supplemental guidance regarding inspector and licensee conduct. Appendix B, “Limiting NRC Impact during Events,” to IP 71153, “Followup of Events and Notices of Enforcement Discretion,” defines the NRC’s protocol for interaction with licensees during emergent plant events.

In addition to the formal protocols for communication between the regulator and its licensees, many formal communications channels exist with respect to the ROP. These include, but are not limited to, the following:

- midcycle and end-of-cycle plant performance assessments (letters and private or public meetings)
- inspection reports
- inspection entrance and exit meetings
- regulatory conferences to discuss enforcement disagreements
- operator licensing activities
- dissemination of operating experience
- monthly public meetings with the Nuclear Energy Institute and licensees to discuss inspection program issues

A specific example of this is when proposed changes to the ROP are communicated and vetted in a public forum, during a monthly ROP public meeting between the NRC staff, the Nuclear Energy Institute, and interested stakeholders. This forum offers an opportunity for frank and open discussions. Although consensus is not required for the NRC to make changes to its program, openness and transparency in NRC decisionmaking, with opportunity for constructive feedback, remains paramount to the agency’s credibility as a regulator.

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Question No: 066

Module 03: Responsibilities and functions of the Regulatory Body

Question

What formal arrangements exist to facilitate discussions between the Regulatory Body and the operator?

Response

Formal discussion of regulatory actions can take place either by written correspondence or in public meetings. 10 CFR 50.4, “Written Communications,” states that “all correspondence, reports, applications, and other written communications from the applicant or licensee to the Nuclear Regulatory Commission concerning the regulations” in 10 CFR Part 50 “or individual license conditions” must be sent by mail to the Document Control Desk or by electronic submission via the Electronic Information Exchange. Through this process, all correspondence submitted by the licensee is placed in the NRC’s Agencywide Documents Access and Management System (ADAMS). Through ADAMS, members of the public can access any publically available document, including those submitted by the licensee and those issued by the agency.

Letters issued by the NRC can range from simple letters asking for information to letters governed by regulations such as 10 CFR 2.204, “Demand for Information” (preceding an order), and 10 CFR 50.54(f) (demand for information not preceding an order). Similarly, a licensee’s response can range from a simple letter to a letter governed by the same regulations. The NRC also documents all of its decisions in writing to the licensees regarding license amendments, relief requests, and so forth. These processes are specifically addressed in NRR Office Instructions LIC 101, “License Amendment Review Procedures,” Revision 2, and LIC 102, “Relief Request Reviews,” Revision 2.

As delineated in COM 202, NRR has a well-established process for conducting formal meetings with the licensee, industry representatives, and the public. The NRC has had a formal policy regarding open meetings since 1978. The policy has been revised periodically, most recently on May 28, 2002 (67 FR 36920). The latest revision continues the NRC’s longstanding practice of providing the public with substantial information on its activities and of conducting business in an open manner while balancing the need for the NRC staff to exercise its regulatory and safety responsibilities without undue administrative burden. There are three different public meeting categories:

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Description—Meetings in this category are typically held with one licensee, vendor, applicant, potential applicant, or petitioner to discuss particular regulatory issues regarding a specific facility, certificate of compliance, license, or license application.

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Level of Public Participation—The NRR staff member conducting the meeting should invite the public to observe the meeting and give the public the opportunity to communicate with the NRR staff after the business portion of the meeting but before the meeting is adjourned. This does not preclude the licensee, vendor, or applicant from responding to questions if he or she chooses to do so.

For Category 1 meetings longer than 2 hours, one or more opportunities should be considered for the public to ask questions before the end of the meeting, if practicable. Otherwise, the NRR staff will remain available to answer questions after the business portion of the meeting has been completed but before the meeting is adjourned. In advance of the meeting, members of the public may request, via e-mail or telephone, that the meeting coordinator consider changing the meeting to a Category 2 meeting (discussed below), depending on the level of public interest in the activity being discussed. Meetings that the NRR staff believes will generate high public interest should also provide more than one opportunity for public comments and questions. The decision on whether or not to change the category of any particular meeting is a matter left to the discretion of the NRR staff on a case-by-case basis.

Examples—Examples of this type of meeting include meetings held on licensing actions (or applications), renewals and amendments, or new facilities.

Category 2

Description—Meetings in this category are typically held with a group of industry representatives, licensees, vendors, or nongovernmental organizations.

Meeting Purpose—The purpose of this type of meeting is for NRR to obtain feedback from the regulated community and other external stakeholders on issues that could potentially affect more than one licensee. At this type of meeting, the public is expected to obtain factual information and provide the agency with feedback on the analysis of the issues and alternatives or on decisions.

Level of Public Participation—The NRR staff member should invite the public to discuss regulatory issues with the agency at designated points identified on the agenda. Generally, there will be more opportunities provided for the public to ask questions and provide comments at a meeting of this type than at a Category 1 meeting.

Examples—This type of meeting includes meetings of task forces and industry groups (such as the Nuclear Energy Institute and owners’ groups) and public interest and citizen group discussions that focus on issues that could apply to several facilities, such as plant system aging, license renewal, decommissioning, or spent fuel storage.

Category 3

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Description—This type of meeting is held with representatives of nongovernmental organizations, private citizens or interested parties, or various businesses or industries (other than those covered under Category 2) to fully engage them in a discussion on regulatory issues.

Meeting Purpose—The purpose of this type of meeting is to maximize discussions with the public to ensure that the public's issues and concerns are presented, understood, and considered by the NRC. It is anticipated that the public will work with the agency to facilitate the widest exchange of information, views, concerns, and suggestions with regard to license-specific or generic regulatory issues.

Level of Public Participation—The NRR staff member conducting the meeting should actively seek public participation at this type of meeting, which has the widest participation opportunities and should be specifically tailored for the public to comment and ask questions throughout the meeting.

Examples—Examples are town hall or roundtable discussions, environmental impact statement scoping meetings, workshops, the Regulatory Information Conference, or proposed rulemaking meetings.

The public will be notified of the category of the meeting, and thereby the level of participation to be anticipated, via the NRC's Public Meeting Notice System on its Web site.

With respect to the NRC's operating reactor inspection program, the ROP, the formal protocol for facilitating discussions can be found in various NRC documents. All qualified NRC inspectors must complete actions required by IMC 1245, and Appendix A to IMC 1245. ISA 3 of IMC 1245, Appendix A identifies the curriculum of study for new inspectors to learn the agency's formal protocols and expectations with regard to communication with licensees. Several formal documents are referenced by ISA 3, including: IMC 0102, MD 7.5, IMC 1201, and NUREG/BR 0075, Policy Nos. 10 and 13. In addition, NRC regional offices often publish their own supplemental guidance regarding inspector and licensee conduct. Appendix B to IP 71153, defines the NRC's protocol for interaction with licensees during emergent plant events.

In addition to the formal protocols for communication between the regulator and its licensees, many formal communications channels exist with respect to the ROP. These include, but are not limited to:

- midcycle and end-of-cycle plant performance assessments (letters and private/public meetings)
- inspection reports
- inspection entrance and exit meetings
- regulatory conferences to discuss enforcement disagreements
- reporting of performance indicator data
- operator licensing activities,
- dissemination of operating experience
- monthly public meetings with the Nuclear Energy Institute and licensees to discuss inspection program issues

Question No: 066AS

Module 03: Responsibilities and functions of the Regulatory Body

Question

What is the formal mechanism for appealing regulatory decisions?

Response

In 10 CFR 2.103, the NRC states that, if the Director of NRR or of the Office of Nuclear Material Safety and Safeguards, as appropriate, finds that an application does not comply with the requirements of the AEA, and with 10 CFR Part 2, he may issue a notice of proposed denial or a notice of denial of the application and inform the licensee/applicant in writing. The applicant will be informed of: (1) the nature of any deficiencies or the reason for the proposed denial or the denial, and (2) the right of the applicant to demand a hearing within 20 days from the date of the notice. Interested parties may ask for a hearing before the NRC's independent and impartial administrative adjudicatory panel, whose membership includes both lawyers and persons trained in the sciences and engineering. The decision of that panel can be appealed to the NRC Commissioners. Under Section 189 of the AEA, the NRC's final action, whether in cases of licensing, enforcement or rulemaking, is appealable to a Federal appellate court, which, however, generally defers to the agency's findings of fact.

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Question No: 067

Module 03: Responsibilities and functions of the Regulatory Body

Question

Is there a mutual understanding on time scales so that both parties can fulfill their respective responsibilities? How are these time scales determined, agreed and reviewed?

Response

There is a mutual understanding on time scales for submission by the licensee of documents in support of applications for authorization and regulatory compliance so that both parties can fulfill their respective responsibilities. For formal regulatory actions associated with licensing, the time scales are defined either by the regulations (e.g., 10 CFR 2.204, "Demand for Information"), NRC orders, correspondence (e.g., "please respond within 30 days of receipt of this letter"), or NRC Office Instructions (e.g., timeframes in LIC 109, "Acceptance Review Procedures," Revision 1, associated with license application acceptance reviews). The response times are determined, agreed upon, and reviewed through the regulatory process in which the licensee and public have ample opportunity to participate. For response times not determined by other guidance or process, the NRC staff typically communicates with the licensee informally to determine what is a reasonable time scale before establishing a schedule.

With respect to content and form, the NRC rigorously controls the form and content of primary licensing documentation through the issuance of NUREG 0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition." This guidance not only provides format for licensing applications, but also provides guidance to the licensees and staff on the regulatory basis that the applications will be assessed against. Once such an application is deemed acceptable for processing, the schedule for the NRC's review of the application is typically set down in writing on the agency's public Web site. The agency makes clear that completion of the review according to the schedule is dependent upon the applicant's timely and complete submission of any further information the NRC staff determines is necessary in the course of the application.

There are minimal requirements associated with the form and content of applications for authorizations that are not primary licensing documentation (i.e., exemptions, relief requests, license transfers). The minimal content and form for these types of authorizations are covered in the regulations, primarily 10 CFR Part 50.

After meeting the minimal requirements associated with the form and content, the consistency in these types of authorization requests come from both regulatory and nonregulatory documentation (i.e., NUREG series, regulatory information summaries, and branch technical positions).

IRRS Question and Response Report

Question No: **067AS**

Module 03: Responsibilities and functions of the Regulatory Body

Question

- 1) How does the Regulatory body encourage the licensees to continuously improve the safety culture of their operations?
- 2) How are the activities of the Regulatory body inspectors directed to reflect the desire to promote a good safety culture within the licensee's organization?

Response

The NRC places a high value on a nuclear industry work environment in which employees are free to raise potential safety concerns to both licensee management and the NRC, regardless of the merits of the concern. In 10 CFR 50.7, "Employee Protection," the NRC sets forth the regulations protecting licensee employees from discrimination when engaging in the protected activities as established by Section 211 of the ERA, as amended. Unlawful adverse actions taken against employees for raising safety concerns may create a chilling effect on the employee or other workers who may wish to raise concerns. That is, the employees may not feel that they are free to raise concerns without fear of retaliation. Therefore, one of the goals of the NRC's enforcement policy is to ensure, through appropriate enforcement action against a licensee or licensee contractor (and when warranted, against the individual personally responsible for the act of discrimination), that adverse employment actions taken against licensee or contractor employees for raising safety concerns do not create a chilled work environment for the individual or others who may be aware of, but reluctant to, report safety concerns. The NRC issued a policy statement in May 1995 to set forth its expectation that licensees establish and maintain safety-conscious environments in which employees feel free to raise safety concerns, both to their management and to the NRC, without fear of retaliation. The responsibility for maintaining such an environment rests with each NRC licensee, as well as with contractors, subcontractors, and employees in the nuclear industry. In addition, the NRC issued Regulatory Information Summary (RIS) 2005 18, "Guidance for Establishing and Maintaining a Safety Conscious Work Environment," in August 2005, to provide licensees with a description of observed best practices. NRC MD 8.8, "Management of Allegations," also provides guidance to the NRC staff regarding proper treatment of allegations, including the steps that NRC management should take in response to receiving an allegation providing a credible fear of retaliation.

The NRC ensures compliance with these policies for operating power reactors through implementation of the ROP inspection and assessment programs as further described in the response to Section III below.

I. How the NRC encourages licensees to continuously improve their safety culture:

The NRC encourages its nuclear power plant licensees to continuously improve their safety culture through implementation of a performance-based and graded oversight approach as part of the NRC's ROP. Licensees are required to meet the regulations noted above and will be subject to consequences, including both civil and criminal enforcement, if they do not comply. If a licensee performs effective voluntary self-assessments of its safety culture, maintains an effective problem identification and resolution (PI&R) program, ensures that a safety conscious work environment (SCWE) is maintained, and establishes a high degree of human performance and human reliability, then the licensee's overall performance should be at a level where the NRC would not necessarily need to request the licensee to perform a safety culture assessment, nor would the NRC need to perform an independent assessment of safety culture. The graded approach prescribes the levels of NRC response to safety culture issues and allows the licensee the opportunity to identify and correct the issues prior to the NRC performing an independent safety culture assessment. Licensees can perform their own assessment in preparation for NRC oversight activities. Provided that the licensee's assessment is valid and reliable, the NRC uses the results to inform further regulatory response. Licensees also voluntarily perform biennial safety culture assessments for the Institute of Nuclear Power Operations (INPO). The NRC can review these assessments during its biennial PI&R inspection, as described in Section III below. The ROP also describes the safety culture characteristics that are assessed during inspection activities and the criteria used for increasing regulatory oversight. Therefore, licensees can develop and track their own performance based on this information and take corrective actions to address issues before the NRC develops a concern with the licensee's performance related to safety culture. In this way, the ROP structure encourages licensees to proactively address safety culture issues.

II. How NRC inspector activities reflect the desire to promote a positive safety culture within licensees' organizations:

NRC inspectors observe factors that are considered important to safety culture that are associated with their inspection findings and communicate those observations to licensees during inspections. These observations also are documented as cross-cutting aspects in inspection reports. In addition, the NRC staff evaluates all findings having safety culture factors to determine if a more substantive issue is present. These decisions also are communicated to licensees. This open dialogue regarding safety culture factors enables a mutual understanding between NRC staff and the licensee of shortcomings in the licensee's performance related to safety culture. The licensee can then implement appropriate corrective and preventive measures to address the identified problem area(s). By taking timely corrective actions in response to NRC concerns, the licensee may prevent further degradation of its performance while addressing safety culture-related issues.

III. How the NRC performs its review of a licensee's safety culture:

IMC 0305 describes the safety culture inspection and assessment processes. IMC 0612, "Power Reactor Inspection Reports," provides additional guidance for documenting NRC concerns with areas important to safety culture. The ROP identifies safety culture components that are considered cross-cutting (i.e., they apply to all seven ROP cornerstones of safety and are associated with the human performance, PI&R, and SCWE cross-cutting areas). The safety culture components have aspects associated with them, which are the performance characteristics that are the most significant contributors to performance deficiencies. During inspections, inspectors evaluate an inspection finding (i.e., a performance deficiency that has more than minor safety significance) to determine if the performance deficiency has a cause related to a safety culture cross-cutting aspect. If it does, then that aspect is assigned to the finding and is tracked in a database. Inspection procedures for following up on events or findings having more than very low safety significance direct inspectors to consider causes related to the safety culture components as part of their efforts to fully understand the circumstances surrounding the finding or event. The findings and any associated safety culture aspects are discussed during exit meetings with licensees and documented in inspection reports.

During the semiannual assessment activities (midcycle and end-of-cycle assessments), the regional staff will review the safety culture aspects that were assigned to findings to determine if a substantive cross-cutting issue (SCCI) exists at a site. An SCCI is a cross-cutting theme related to inspection findings about which the NRC staff has a concern with the licensee's scope of efforts or progress in addressing the cross-cutting theme. An SCCI, including its closure criteria, is documented in the semiannual assessment letter to the licensee. The licensee is expected to place the issue in its corrective action

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program and resolve it. The NRC will perform a follow-up inspection using the PI&R inspection procedure (IP 71152) to monitor the licensee's progress in resolving the SCCI.

The NRC may request a licensee to perform a safety culture assessment for the following situations: (1) the third consecutive assessment letter identifying the same SCCI with the same cross-cutting theme, (2) if the NRC determines that the licensee did not recognize that safety culture components caused or significantly contributed to risk-significant performance issues, or (3) if the licensee enters the Multiple/Repetitive Degraded Cornerstone column of the ROP Action Matrix. For the first case, the NRC would expect the licensee to perform a self-assessment and then follow up on that assessment using IP 71152. For the second case, the NRC would expect the licensee to perform an independent safety culture assessment and follow up on that assessment using IP 71152. For the third case, the NRC would expect the licensee to have a third-party safety culture assessment performed, and the NRC would use a graded follow-up approach for that assessment using a supplemental inspection procedure. If the licensee refuses to perform the assessments, the NRC can perform its own assessment of the licensee's safety culture.

In summary, the cross-cutting aspect and SCCI processes allow the NRC staff to independently gain insights into areas important to a licensee's safety culture and provide the NRC with the opportunity to notify the licensee of a safety culture concern to allow the licensee to take corrective actions before performance significantly degrades. If a licensee's performance does degrade, then the NRC increases its regulatory response by requesting (or performing) safety culture assessments. The NRC staff established an internal review group that periodically meets to review lessons learned and stakeholder feedback to determine if program changes or enhancements are necessary. The NRC also periodically meets with the industry to discuss safety culture policy and initiatives.

In response to the Commission's request to evaluate whether or not safety culture as applied to reactors needs to be strengthened, the staff provided its evaluation results in SECY 09 0075, "Safety Culture Policy Statement." The staff concluded that the current process of considering cross-cutting aspects of inspection findings is effective because it offers insights into a licensee's safety culture. By tagging cross-cutting aspects to inspection findings, the staff has been able to gain insights into performance areas that have the potential to reflect organizational dynamics including safety culture. The NRC's regulatory response has focused on licensees' corrective action plans and their demonstrated improvement through subsequent safety culture assessments and inspection findings. The combined focus of the NRC and the nuclear power industry on safety culture has increased attention to this issue across the operating fleet, and the staff is aware of an increasing number of licensees that are conducting periodic safety culture self-assessments independent of the NRC's regulatory response. The NRC's oversight of safety culture as applied to reactors continues to be refined in accordance with the existing ROP self-assessment process. The staff will continue to solicit feedback from internal and external stakeholders to inform future improvements to the ROP, including its implementation of safety culture oversight.

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Question No: 071

Module 03: Responsibilities and functions of the Regulatory Body

Question

Are there enough TSOs (in number and type) to cover all the subjects or areas that the regulatory body needs to address using TSOs so that the independence of the regulator is not compromised?

Response

The NRC routinely issues contracts for research projects and to gain access to independent technical expertise. The NRC's major source of this expertise is the U.S. National Laboratory system. The National Laboratory system includes numerous separate research facilities, located throughout the United States, with extensive and varied technical capabilities. However, the NRC also contracts with other Federal agencies, universities, and commercial businesses to carry out research projects and obtain sources of technical expertise.

Section 170A of the AEA and the implementing NRC acquisition regulation (48 CFR 2009.570, "NRC Organizational Conflicts of Interest") require the agency to avoid, eliminate, and neutralize organizational conflict of interest (OCOI). This regulation applies to potential or actual OCOIs with TSOs potentially supporting the NRC's mission. To this end, NRC requires every prospective TSO to submit information describing any relationship it may have with other persons or organizations that might result in an actual or potential OCOI if it were to serve as a TSO. The NRC's policy ensures that NRC independence is not compromised by using TSOs that may have relationships with others that may diminish their capacity to give impartial, technically sound, objective technical assistance and advice or may result in an inferior work product.

A special case of cooperative agreements is that of cooperation with industry organizations, such as the Electric Power Research Institute (EPRI). The NRC utilizes technical information by cooperating on design and execution of tests but ensures independence by doing its own analysis of the applicability of results and implications for the regulatory environment.

NRC has implemented extensive procedures, management controls, and staff training to ensure that the NRC's independence is not compromised due to OCOI in the use of TSOs. However, these requirements may be waived in situations where the work to be performed is vital to an NRC program, where the work cannot be satisfactorily performed except by a contractor whose interests give rise to a question of conflict of interest, and where contractual or technical review and surveillance methods can be employed by the NRC to neutralize the conflict. With rare exception, it has been NRC's past experience that there have been sufficient TSOs to cover all of NRC's regulatory mission areas, without the need to implement a waiver along with employing technical review and surveillance methods to neutralize the conflict. The exceptions have been rare because there has been and continues to be a robust infrastructure of TSOs within the United States and internationally for current (e.g., light-water reactor) technological applications.

The NRC maintains a large staff of independent technical experts in areas relevant to its safety mission. A number of these staff members have advanced degrees in their areas of expertise and many years of experience. The NRC maintains this high level of expertise by providing training opportunities; by the agency's routine active participation with technical experts outside of the agency, both domestically and internationally; and by carefully recruiting new staff with educational and experience backgrounds that match the agency's technical needs.

To augment this staff, the NRC has implemented a multiyear hiring plan that substantially increased the staffing levels of its technical review and safety research organizations. The NRC continues to actively seek opportunities to address needed safety research expertise at national universities. The NRC also has established a scholarship and fellowship program to enable students to study science, engineering, or other fields of study that the Commission determines are in a critical skill area related to the regulatory mission of the Commission. Additionally, national programs, such as scholarship and fellowship programs implemented by DOE, and the natural increase in university enrollments of students pursuing nuclear-related degrees due to expanded nuclear professional employment opportunities in the United States, are expected to effectively ensure adequate quality and quantity of independent TSOs in all needed technical areas over the long-term.

The agency can also ensure independent expertise by establishing its own research and development center, as the agency did in 1987 when it established the Center for Nuclear Waste Regulatory Analyses to help resolve issues related to a geologic repository for high-level waste. The NRC stands ready to establish this sort of independent support organization when required, but no such need currently exists.

The NRC has the ability to set up and fund independent advisory bodies to provide expert opinion and advice. The NRC has an established formal advisory committee. This organization, the ACRS, established by law, provides independent opinion and advice to the NRC Commission. The members are technical experts in various fields who enable the ACRS to give expert advice. The Committee functions separately from the NRC staff and provides advice and opinion on topics such as the licensing and operation of nuclear facilities and related safety issues, the adequacy of proposed reactor safety standards, and technical and policy issues related to the licensing of evolutionary and passive plant designs. The ACRS also submits an annual report to the NRC Commission commenting on the adequacy of the NRC safety research program. In the area of nuclear materials, the ACRS advises on the transportation, storage, and disposal of high-level and low-level radioactive waste, including the interim storage of spent nuclear fuel; nuclear materials safety; decommissioning; license renewals; the application of risk-informed, performance-based regulations; and the evaluation of licensing documents, rules, and regulatory guidance. The advice and opinions provided by the ACRS are a significant aspect of the regulatory process.