



**U.S.NRC**

United States Nuclear Regulatory Commission

*Protecting People and the Environment*

**IRRS UNITED STATES 2010**

# *Question and Response Report*

*for:*

**Module 05: Authorization**

# IRRS Question and Response Report

Question No: 072

Module 05: Authorization

## Question

What is the legal basis for the authorization process? What are the legal instruments for the authorizations (consents, approval, license, permits, regulatory decisions etc.)?

## Response

Production and utilization facilities are licensed pursuant to Sections 103, 104.b, or 185 of the Atomic Energy Act of 1954, as amended (AEA). Section 103 of the AEA grants the U.S. Nuclear Regulatory Commission (NRC) the authority to issue commercial licenses “to persons applying therefore to transfer or receive in interstate commerce, manufacture, produce, transfer, acquire, possess, use, import or export under the terms of an agreement for cooperation arranged pursuant to section 123 (cooperation with other nations), utilization or production facilities for industrial or commercial purposes.” This section further prescribes certain threshold conditions required for issuance of a license. For example, the Commission must find that the proposed activities will serve a useful purpose proportionate to the quantities of special nuclear material utilized, that licenses are issued to those who are equipped to observe safety standards to protect health and to minimize danger to life and property, and that those who are granted licenses agree to make available to the Commission technical information and data. Section 103 further grants the Commission the authority to determine the length of each license issued (up to 40 years) and allows the Commission to renew licenses. Section 104.b of the AEA allows the Commission to issue licenses to production and utilization facilities for industrial or commercial purposes, for medical therapy, and for research and development. The Section 104.b license, which originally was aimed at research and development leading to commercial application, was to entail “the minimum amount” of regulation needed to permit the Commission to fulfill its obligations. The statute thus took account of the potential magnitude and nature of the hazard associated with the facility. Construction permits are issued to entities that apply for authorization to construct a production or utilization facility under Title 10 of the Code of Federal Regulations (10 CFR) Part 50, “Domestic Licensing of Production and Utilization Facilities,” of the Commission’s regulations. The entity later applies for a license that authorizes operation of the constructed facility. But Section 185 of the AEA also authorizes the agency to grant applicants a combined construction and operating license before they begin construction of production or utilization facilities. As part of this combined license, the Commission must identify the “inspections, tests, and analyses, including those applicable to emergency planning, that the licensee shall perform” These licenses are issued after a safety and environmental review and an opportunity for a public hearing. Section 189 of the AEA sets forth those actions for which a hearing is required. That section of the AEA also sets forth the requirements to be followed in issuing amendments to licenses. Amendments that involve no significant hazards considerations can be granted before a hearing is held. Licensing and hearing procedures are spelled out in detail in the NRC’s regulations.

Question No: 073

Module 05: Authorization

## Question

What types of authorization does the regulatory body issue (permit for construction, approval of discharge limits, permit for handling of radioactive source, license to operate etc.)?

## Response

The NRC issues construction permits, operating licenses, license amendments, licenses to receive and possess special, byproduct, or source materials, and amendments to such licenses. Effluent discharge permits are issued either by the Environmental Protection Agency or by states to which this authority has been delegated. (See also the response to Question 072.)

# IRRS Question and Response Report

Question No: 074

Module 05: Authorization

## Question

How the regulatory body control authorization for complex facilities (such as a new construction or major modification programs of nuclear facilities). What stages are identified (siting, construction, commissioning, operation, decommissioning, de-licensing etc.)? How does the regulatory body establish the conditions for issuing authorizations at each of these stages?

## Response

The NRC requires authorization for major changes to complex facilities, for renewal of licenses of such facilities, and for their decommissioning. Applications for such authorizations must address both safety and environmental issues. Some steps of these processes are spelled out in statute (see, e.g., Section 189 of the AEA), but NRC regulations and guidance provide the details.

The AEA, established the NRC's authority to regulate all private and commercial uses of radioactive materials, including nuclear power plants. The NRC maintains control of authorization for complex facilities such as new construction and major modifications through its regulations. Siting, early site permit, standard design certification, construction permit, operating license, and combined license applications are submitted by the applicant to the NRC under either 10 CFR Part 50 or 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants." Modification to programs, such as quality assurance and emergency planning, are submitted under 10 CFR 50.54, "Conditions of License." License amendment applications are submitted under 10 CFR 50.90, "Application for Amendment of License, Construction Permit, or Early Site Permit." Operating license renewals are submitted under 10 CFR Part 54. The regulations for termination of license for power reactors and facility closeout technical assessments and reviews are performed under 10 CFR 50.82, "Termination of License."

To help prioritize work and establish a graded approach to safety, 10 CFR 50.54 establishes a threshold for when program modifications must be submitted to the NRC for prior approval. In 10 CFR 50.59, "Changes, Tests and Experiments," the NRC provides procedural guidance for determining if a change needs to be submitted to the NRC for prior approval.

In addition, applications must address the applicable regulations of the National Environmental Policy Act in 10 CFR Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions." All stages of a nuclear reactor facility—siting, construction, special nuclear material license, low power license, full power/commissioning, possession only license, and decommissioning—are controlled through regulation. Further guidance, such as the Standard Review Plan, is available to applicants and reviewers. Prior to issuance of an authorization, the NRC staff does a technical review. The NRC staff inspects and provides oversight during the entire process.

Question No: 075

Module 05: Authorization

## Question

How are authorizations handled at multi-facility or multi-operator sites?

## Response

Multiple-unit sites are required to meet the same standards for safety as single-unit sites. Reactors at multiple-unit sites are licensed and inspected both on a unit-by-unit basis and also reflecting the impacts of multiple units. Additional issues are considered during the licensing process and inspection phases (from initial construction through decommissioning), including items such as the construction impact of the additional units (e.g., impact of additional work force ingress and egress, work near existing unit infrastructure, modifying existing systems, structural impact, hazardous conditions), common facilities, common workforce, emergency response planning, shared infrastructure (e.g., switchyard, ultimate heat sink), potential unit interactions (e.g., operators or maintenance personnel acting in the wrong unit, spare part management between units), common programs, scheduling and implementation of significant activities, impact on resources and safety focus during significant activities at another unit, and accident response and mitigation between units (e.g., station blackout, radioactive release from other unit).

If a site is initially licensed for multiple units, then the issues are addressed during the initial licensing process of each unit. If an additional unit is proposed to an existing site (with an operating unit), then the licensing of the second unit focuses on the potential impacts and the initial plant updated final safety analysis report, and license are also modified, as required, to reflect the impacts of the additional unit.

If a nuclear unit is to be on a site with a nonnuclear unit, the additional concerns are also addressed during the licensing process.

Inspections at multiple-unit sites monitor and inspect all of the potential interfaces and interactions between the units in addition to the items that would be monitored and inspected at a single-unit facility. The NRC commits more resources to multiple-unit sites.

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Question No: 076

Module 05: Authorization

## Question

How do the conditions of authorizations specify the:

- I. facilities and activities covered by the authorization?
- II. requirements for notifying any modifications to safety related aspects?

## 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. 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 AEA, 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, 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 by either EPA or 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, NRC 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, 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. This section further 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 (e.g., 10 CFR 50.71, “Maintenance of Records, Making of reports”); see there especially 10 CFR 50.71(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 that are governed by criteria mainly in 10 CFR 50.47, “Emergency Plans,” and Appendix E, “Emergency Planning and

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Preparedness for Production and Utilization Facilities,” to 10 CFR Part 50. (Guidance on 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,” Revision 1, issued November 1980.

Question No: 077

Module 05: Authorization

## Question

What procedures are established for any subsequent amendment, suspension or revocation of an authorization? What is the review and assessment process in this case?

## Response

Licensees may seek amendments to their licenses. The amendment process is controlled by Section 189 of the Atomic Energy Act, as amended, and 10 CFR 50.90, 10 CFR 50.91, “Notice for Public Comment; State Consultation,” and 10 CFR 50.92, “Issuance of Amendment,” of the Commission’s regulations. Once the application is received by the agency, the staff begins a safety and environmental review. The staff may decline to review the application if it does not contain enough information for the staff to begin its review. If the application is found acceptable, the staff reviews the information and requests additional information in specific areas if necessary. Once the review is completed and the staff has determined that the amendment satisfies the Commission’s regulations, that there is reasonable assurance that the activities will not endanger the health and safety of the public, and that the amendment is not inimical to the common defense and security, the staff prepares a safety evaluation report, which contains the basis for the staff’s determination that the amendment should be granted. Also, in cases in which the agency action is not categorically excluded from environmental analysis, the staff also prepares either an environmental assessment or an environmental impact statement, as appropriate. An opportunity for a hearing is provided for license amendments. If the amendment does not involve significant hazards considerations, the hearing may be held after the amendment is issued. The amendment does not involve significant hazards considerations if it does not (1) involve a significant increase in the probability or consequences of an accident previously evaluated, or (2) create the possibility of a new or different kind of accident from any accident previously evaluated, or (3) involve a significant reduction in the margin of safety. For amendments that do not satisfy these criteria, any requested hearing must be completed prior to issuance of the amendment.

Licenses are suspended or revoked by issuance of an order to the licensee. These orders may be immediately effective. There are procedures in 10 CFR 2.202, “Orders,” for challenging the immediate effectiveness of the order. To make such a challenge, the licensee must answer the order, request an immediate hearing, and move for the presiding officer to set aside the order on the grounds that it is not based on adequate evidence but on mere suspicion, unfounded allegations, or error. The Commission may revoke licenses pursuant to Section 186 of the Atomic Energy Act, as amended, if it is determined that, had the Commission been aware of the information it now has, it would not have issued the license in the first instance. Interested parties may seek a hearing on an order to suspend or revoke. The hearing would be before impartial NRC administrative judges, and their decision could be appealed to the Commissioners and ultimately to a Federal Court of Appeals.

Licensees may seek 20-year renewals of their licenses. The regulations governing renewal, 10 CFR Part 54, set out requirements for the contents of applications for renewal and requirements relating to timeliness of renewal.

Question No: 078

Module 05: Authorization

## Question

Can authorization be legally challenged? If so who has the right to challenge it?

## Response

The initial issuance of an amendment to a license may be challenged by any member of the public, or by any organization whose interest will be adversely affected by the proposed action. This is accomplished through the intervention process. The standards for gaining intervention are set forth in 10 CFR 2.309, “Hearing Requests, Petitions to Intervene, Requirements for Standing, and Contentions.” A petitioner for intervention must demonstrate that the decision on authorization could have some effect on the petitioner, and the petitioner must proffer at least one admissible contention. The requirements for an admissible contention are also set forth in 10 CFR 2.309. Further, an applicant or intervener may also seek judicial review of the agency’s ultimate decision on whether or not to authorize construction or operation. Section 189.b of the Atomic Energy Act, as amended, makes the agency’s final actions on authorization reviewable in a Federal Court of Appeals.

The NRC’s rules and regulations prescribe criteria that, if met, allow the agency to take action on a matter prior to resolution of a legal challenge, provided certain criteria are met. For example, in the case of a requested amendment to a license granted under 10 CFR Part 50, the NRC may approve the amendment prior to resolution of the challenge if the amendment is found not to involve a “significant hazards consideration.” The amendment does not involve significant hazards consideration if it does not (1) involve a significant increase in the probability or consequences of an accident previously evaluated, or (2) create the possibility of a new or different kind of accident from any accident previously evaluated, or (3) involve a significant reduction in the margin of safety.

Additionally, licensees can challenge NRC decisions to deny issuance of a license or granting of an amendment.

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Question No: 079

Module 05: Authorization

## Question

Does the applicant have the right to appeal against conditions set out in the authorization? If yes, to whom is the appeal made and how are differences of view resolved?

## Response

Authorization is the granting by a regulatory body of written permission for a licensee to perform specified activities. As such, an authorization could include: licensing or certification. The term “authorization” is also sometimes used to describe the document granting such permission. Authorization is normally a more formal process than approval.

If the NRC finds that an application (e.g., construction permit, operating license, amendment to an existing license) does not comply with the requirements of the Atomic Energy Act, as amended, and NRC regulations, it may issue a notice of proposed denial or a notice of denial of the application and inform the applicant in writing 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 the period specified in the notice.

Further, when the condition is already part of an existing license, the licensee may apply to the agency to have the license amended by removing the condition. When the condition is rooted in a regulation, the licensee could submit a petition for rulemaking or ask for an exemption from the rule. Under Section 189b of the Atomic Energy Act, as amended, the applicant may also seek judicial review of an unfavorable decision by the agency.

Question No: 080

Module 05: Authorization

## Question

How does the Regulatory Body issue guidance to the operator on the format and content of documents to be submitted in support of an application for authorization, if so, what i

## Response

The general requirements on the format and content of documents to be submitted in support of an application for authorization are found in the NRC’s regulations in 10 CFR, “Energy.” These general requirements apply to many types of authorizations. More specific requirements on the format and content of the applications are found in regulations specific to the type of application (e.g., license amendments, license transfers, license renewals, termination of license). As needed, the NRC issues guidance (based on the NRC’s regulations) regarding the format and content of applications by use of documents such as regulatory guides (RGs), NUREGs, generic communications, and Standard Review Plans. Applicable requirements are 10 CFR 50.4, “Written Communications,” 10 CFR 50.30, “Filing of Applications for Licenses; Oath or Affirmation,” 10 CFR 50.33, “Contents of Applications; General Information,” and 10 CFR 50.34, “Contents of Applications; Technical Information.” (See the response to Question 87 for a discussion of the license renewal process.)

The minimal requirements for applications for a license or amendment to a license are described in 10 CFR 50.4, 50.90, 50.91, and 50.92. The guidance highlights key elements that should be contained in a license amendment application. The licensee’s submittal must include sufficient information to support the regulatory decisions associated with a specific license amendment application.

In support of these applications, the NRC also provides guidance to applicants, such as that in RGs, which describe one or more acceptable ways of meeting the NRC’s regulations. Although not requirements, these documents discuss a means of meeting the regulations that has already been determined to be acceptable to the NRC, thereby reducing regulatory uncertainty. Additionally, the NRC has internal guidance to its staff for performing reviews (e.g., NUREG 0800, “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition”). Typically, these documents are made publically available so that applicants and licensees know the criteria to be used in an evaluation. Some examples of RGs are RG 1.70, “Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants (LWR Edition)”; RG 1.179, “Standard Format and Content of License Termination Plans for Nuclear Power Reactors”; and RG 1.188, “Standard Format and Content for Applications To Renew Nuclear Power Plant Operating Licenses.”

After determining that a tendered application for a construction permit or operating license and any required environmental report are complete and acceptable for docketing, the NRC will assign a docket number to the application or part thereof, and the applicant will be notified of the determination. If it is determined that all or any part of the tendered application or environmental report is incomplete and therefore not acceptable for processing, the applicant will be informed of this determination, and the deficiencies in the application will be communicated to the applicant. Amendments to an application and supplements to the environmental impact statement are filed in the same manner as for the initial application and environmental impact statement (see 10 CFR 2.101, “Filing of Application”).

To renew a nuclear power plant operating license, an applicant must meet the requirements delineated in 10 CFR Part 54. (See the response to Question 87 for a discussion of the license renewal process.)

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Question No: 081

Module 05: Authorization

## Question

Does the required safety documentation include information on decommissioning? If so, what information is required at each stage?

## Response

### Applicable Requirement

The NRC's regulations are found in Chapter I, "Nuclear Regulatory Commission," of 10 CFR. Chapter I is divided into Parts 1 through 199.

In 10 CFR Part 20, the NRC lists the decommissioning radiological safety criteria. Subpart E, "Radiological Criteria for License Termination," of 10 CFR Part 20 is also known as the License Termination Rule (LTR).

Safety documentation information for each reactor decommissioning stage is described in 10 CFR 50.82. This regulation provides the major steps in the reactor decommissioning process: notification, submittal and review of the postshutdown decommissioning activities report (PSDAR), submittal and review of the license termination plan (LTP), implementation of the LTP, and completion of decommissioning. At each stage, documentation is provided to support the completion of the stage.

### Staff Implementation

NUREG 1700, Revision 1, "Standard Review Plan for Evaluating Nuclear Power Reactor License Termination Plans," issued April 2003, provides guidance for NRC staff when conducting safety reviews of license termination plans to ensure the quality and uniformity of reviews, and to present a well-defined base from which to evaluate the requirements for terminating the license of a nuclear power plant. NUREG 1757, "Consolidated Decommissioning Guidance," provides general guidance that may be used by reactor licensees for planning and implementing license termination under the LTR.

### Guidance To Licensees

The primary decommissioning guidance documents are NUREG 1757 and NUREG 1700, Revision 1. In addition, NUREG 1628, "Staff Responses to Frequently Asked Questions Concerning Decommissioning of Nuclear Power Reactors," issued June 2000, reflects the feedback from public meetings and staff experience regarding decommissioning. Additional guidance is provided on the NRC's Web site at <http://www.nrc.gov/what we do/regulatory/decommissioning/reg-guides-comm.html>.

In addition, NUREG 1757 provides additional detailed information for demonstrating compliance to these regulations. The operator is required to prepare the following for review by the NRC:

**Notification:** When the licensee/operator has decided to permanently cease operations, it is required to submit a written notification to the NRC within 30 days, certifying to the NRC that the nuclear fuel has been permanently removed from the reactor vessel. This certification confirms that the licensee shall continue to conform to 10 CFR 50.40, "Common Standards." In 10 CFR 50.40, the NRC requires that the licensee shall comply with its NRC license, provide reasonable assurance that the health and safety of the public will not be endangered, assure the common defense and security, and is technically and financially qualified to perform the proposed activities.

**Submittal and review of the PSDAR:** Before or within 2 years following cessation of operations, the licensee must submit a PSDAR. The PSDAR must include a description and schedule for the planned decommissioning activities, an estimate of the expected costs, and a discussion that provides the means for concluding that the environmental impacts associated with the decommissioning activities will be bounded by appropriately issued environmental impact statements. The NRC staff will notice receipt of the PSDAR in the Federal Register and make the PSDAR available for public comment. In addition, the NRC staff will hold a public meeting near the licensee's facility to discuss the PSDAR. The NRC staff does not approve the PSDAR. The licensee cannot perform any major decommissioning activities until 90 days after the NRC has received the PSDAR. After this period, the licensee can perform decommissioning activities as long as the activities do not release the site for unrestricted use, result in significant environmental impacts not previously reviewed, or result in there no longer being reasonable assurance that adequate funds will be available for decommissioning. In taking actions permitted under 10 CFR 50.59 following the submittal of the PSDAR, the licensee must notify the NRC in writing before performing any decommissioning activity inconsistent with, or making any significant schedule change from, those actions and schedules in the PSDAR.

### License Termination Plan

Each power reactor must submit an application for termination of its license within 2 years of its planned license termination date. The LTP is a supplement to or equivalent to the FSAR. The application must be accompanied by or preceded by an LTP submitted for NRC approval. The LTP must include:

- a site characterization
- identification of remaining dismantlement activities
- plans for site remediation
- detailed plans for the final radiation survey
- a description of the end use of the site, if restricted
- an updated site-specific estimate of remaining decommissioning costs
- a supplement to the environmental report describing any new information or significant environmental change associated with the licensee's proposed

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termination activities

-identification of parts, if any, of the facility or site that were released for use before approval of the license termination plan

In addition, the licensee must demonstrate that the applicable requirements of the LTR will be met.

The NRC staff will notice receipt of the LTP and make it available for public comment. In addition, the NRC staff will hold a public meeting near the licensee's facility to discuss the LTP and the LTP review process. The review process is similar to that for material and fuel cycle licensees. The technical review is guided by NUREG 1700. The LTP is approved by license amendment.

As with material and fuel cycle facilities, the NRC staff will inspect the site during decommissioning operations to ensure compliance with the approved LTP. These inspections will normally include in-process and confirmatory radiological surveys.

Decommissioning must be completed within 60 years of permanent cessation of operations unless otherwise approved by the Commission.

## Completion of Decommissioning

At the conclusion of decommissioning activities, the licensee will submit a final radiological survey report. The NRC will terminate the license if it determines that (1) the remaining dismantlement has been performed in accordance with the approved LTP; and (2) the final radiation survey and associated documentation demonstrate that the facility and site are suitable for release in accordance with the LTR.

**Question No:** 082

**Module 05: Authorization**

## Question

How is the process of authorization linked to the review and assessment?

## Response

The authorization process is a continuing process through each stage (e.g., siting, design, construction, commissioning, operation, modification, renewal, and decommissioning) of the regulatory process for NRC-regulated nuclear facilities.

To obtain an authorization, the applicant submits documentation to the NRC for its review and assessment. The applicant may follow guidance that is publicly available to support the development of a quality submittal. RGs are issued by the NRC to describe and make available to the public methods that the NRC staff considers acceptable for use in implementing specific parts of the NRC's regulations, techniques used by the NRC staff in evaluating specific problems or postulated accidents, and data needed by the staff in its review of applications for permits or licenses. To assure the quality and uniformity of safety reviews, the NRC has developed a Standard Review Plan (SRP) for use by the NRC staff in review and assessment of requests for authorization.

The SRP has been made public to improve communication between the NRC and applicants, and to further the understanding of the NRC's review process.

The NRC staff decision on whether to grant or deny a request for authorization is based on a review and assessment of the information submitted by the applicant. The review and assessment determines whether or not the information from the applicant demonstrates that the applicable criteria and regulatory requirements will be met and that there is reasonable assurance that the health and safety of the public will not be endangered by the proposed activity. Relevant information associated with previous authorizations is reviewed and assessed to understand the regulatory framework associated with the specific facility (i.e., licensing bases). The NRC staff may request additional information during its review and assessment to evaluate if applicable regulatory requirements have been satisfied. If the licensee does not provide sufficient information by the specified time, the authorization may be denied through 10 CFR 2.108, "Denial of Application for Failure to Supply Information." The granting of an authorization may include imposition of conditions or limitations on the licensee's subsequent activities.

Through the oversight process, the NRC staff performs inspections to ensure that the facility is being operated in accordance with its license and the applicable regulatory requirements.

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Question No: 083

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## Question

What controls does the regulatory body have to determine the time scale from receipt of an application to the granting of the authorization?

## Response

As discussed in the NRC's Strategic Plan, the NRC's objective of effectiveness requires that "NRC actions are high quality, efficient, timely and realistic." Two of the effectiveness strategies are to "provide clear and timely guidance to applicants and licensees to foster the submittal of high quality and timely applications or license amendment requests," and "reach high-quality and timely decisions." Timeliness, a key product of efficiency, means acting within a predictable timeframe and without unnecessary delays. The timeliness of NRC actions is a key component to providing a stable, reliable, and responsive regulatory environment.

The NRC has established timeliness goals for many of its regulatory activities (including authorizations) and regularly tracks its performance in meeting these goals. Specific timeliness goals and results are reported annually to the U.S. President, Congress, and the Office of Management and Budget (OMB) in the NRC's Performance and Accountability Report.

Schedules for completion of the NRC staff reviews are routinely communicated to the licensee. The schedules allow for the fact that the initial application may be incomplete and require submittal of additional information from the licensee. Although the NRC will never compromise safety for the sake of meeting its timeliness goals, the agency works to improve the efficiency of its regulatory processes whenever practicable.

To support the management of each new reactor application review, the regulatory body is developing detailed project management models for each licensing application for the purposes of planning and scheduling, monitoring activities and issues, work control, and resource management. In developing these detailed models and schedules, the regulatory body is analyzing and including all anticipated licensing activities. These models are based on expected level of effort for all aspects of the application reviews and capture all technical and regulatory requirements.

Question No: 084

Module 05: Authorization

## Question

Is the operator required to submit within an agreed time scale all information that is specified and requested by the Regulatory Body? How is this time scale determined?

## Response

For operating reactors, the NRC expects licensees to submit authorization requests to modify their license approximately 1 year before the approval is expected. Following submittal by the applicant, the NRC performs an acceptance review to determine if the submittal is sufficiently complete for the NRC staff to begin detailed review. If deficiencies are identified during the acceptance review, the applicant may have the opportunity to correct the deficiencies or withdraw the request.

Following acceptance for detailed review, the NRC may have questions that require additional information from the applicant. Under these circumstances, the licensee may provide the additional information within a mutually agreed-upon time or withdraw the request. An applicant's failure to provide requested additional information within the agreed-upon schedules could result in delays in the issuance of the authorization. If the licensee does not correct the deficiencies within the specified time, the application may be denied in accordance with the regulations in 10 CFR 2.108. This regulation states that an application may be denied if an applicant fails to respond to a request for additional information within 30 days from the date of the request, or within such other time as may be specified.

For license renewals, 10 CFR Part 54 and 10 CFR 2.109, "Effect of Timely Renewal Application," enable a licensee who applies for renewal with a sufficient application at least 5 years prior to the expiration of the existing license to continue to operate under the existing license until a decision is made on the renewal.

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Question No: 085

Module 05: Authorization

## Question

Is there time allowed in the authorization process for public consultation, and if so, what is a typical time period for consultation?

## Response

The NRC's goal of openness recognizes that stakeholders be informed about and have an opportunity to participate in the NRC's regulatory process. The NRC views nuclear regulation as a task performed in the public interest. As such, regulatory actions are expected to be transacted openly and candidly in order to maintain the public's confidence. The agency is committed to keeping the public informed and involved in all aspects of the regulatory processes.

In general, the public is notified through the Federal Register of applications for the issuance, amendment, transfer, or renewal of a license and provided with the opportunity to comment or request a hearing on the application, in accordance with 10 CFR Part 2, Subpart A, "Procedure for Issuance, Amendment, Transfer, or Renewal of a License, and Standard Design Approval." Alternative procedures are provided in 10 CFR 50.91 for notifying the public via local newspapers and allowing for public comment and requests for hearing in case of the need to issue a license amendment under exigent or emergency circumstances. For major licensing actions, the NRC typically holds public meetings during the licensing process. These meetings are typically held with the licensee but are open to the public, with the exception of discussions of proprietary or sensitive (e.g., security) information. During these meetings, the public is invited to observe the meeting and may communicate with the NRC staff after the business portion of the meeting is completed, but before the meeting is adjourned. In cases where there is high public interest regarding a proposed authorization, the NRC staff may hold meetings directly with the public. Notices of meetings are published on the NRC's Web site typically at least 10 days prior to the meeting. Notices regarding opportunities for hearings, which are required by the Atomic Energy Act, as amended, or for public comment on all reactor licensing actions, including amendments to a facility's operating license, or license renewal proceedings, are published in the Federal Register. The Commission's regulations at 10 CFR 50.91 require a public comment period of 30 days, and 10 CFR 2.309 requires a period of 60 days to allow the public to request a hearing following publication of the notice in the Federal Register.

Further information regarding public involvement in NRC activities can be found on the NRC's Web site at: <http://www.nrc.gov/public-involve.html>.

For new reactor applications, opportunities for public involvement exist as part of the review processes. There are typically many opportunities for public involvement, including public meetings that the regulatory body commonly holds with applicants. For certain types of new reactor applications (early site permit and combined license applications), there is a mandatory hearing process that allows external stakeholder participation. For other new reactor applications (design certification applications), external stakeholder participation occurs through the rulemaking process.

Furthermore, the National Environmental Policy Act requires an environmental review prior to the issuance of any license. The Act explicitly calls for public consultation during the initial phase of the review when the scope and areas of emphasis are defined. Public consultation is also required by the Act following issuance of the draft environmental impact statement, which assesses the impacts of the proposed action and alternatives. The NRC's regulations at 10 CFR Part 51 address environmental regulations for domestic licensing and prescribe criteria for and identification of licensing and regulatory activities requiring an environmental impact statement or environmental assessment, as well as a criterion for categorical exclusion (i.e., the category of actions does not individually or cumulatively have a significant effect on the human environment) from environmental review.

# IRRS Question and Response Report

Question No: 086

Module 05: Authorization

## Question

How does the Regulatory Body formally record the basis for either granting or refusing an authorization application?

## Response

All U.S. Federal agencies are required to establish a records management program to ensure compliance with the regulations governing records management issued by the National Archives and Records Administration (NARA) and the General Services Administration (GSA). NARA regulations require the NRC to create and preserve records containing adequate and proper documentation of the organization, functions, policies, decisions, procedures, and essential transactions of the agency. Agencywide guidance provides the NRC's policy and detailed procedures, standards, and guidelines for managing NRC's official records in accordance with the NARA and GSA regulations.

Typically, authorizations are documented by formal letter from the NRC to the applicant. In most cases, a safety evaluation will be enclosed with the letter forwarding the staff decision. The safety evaluation provides detailed discussion of the basis for the regulatory body's decisions, including the technical, safety, and legal basis. The safety evaluation shall provide sufficient information to explain the staff's rationale to someone unfamiliar with the licensee's request. The safety evaluation includes a brief description of the proposed authorization, the regulatory requirements related to the issue, and an evaluation that explains why the staff's disposition of the request satisfies the regulatory requirements. The evaluation references the information provided by the licensee that was relied upon in the staff's decision. The evaluation also documents any independent analysis performed by the staff or its consultants that was used as part of the decisionmaking process. Finally, the safety evaluation includes the staff's conclusion with respect to the impact of the proposed authorization as it relates to public health and safety.

The granting of an authorization may include the imposition of conditions or limitations on the licensee's subsequent activities. These conditions or limitations would also be documented in the safety evaluation.

Under the Administrative Procedure Act, if the NRC denies the application for a licensing action, the agency must give prompt notice of the denial and provide a statement of the grounds for denial.

# IRRS Question and Response Report

Question No: 087

Module 05: Authorization

## Question

Are authorizations time limited? If yes, how does the renewal process work?

## Response

### Operating Reactor License Renewal Process

The Atomic Energy Act, as amended, authorizes the NRC to issue licenses for power reactors to operate for 40 years and allows the licenses to be renewed. A 40 year license term was selected on the basis of economic and antitrust considerations, not technical limitations. In accordance with the NRC's regulations, a licensee may renew its operating license for up to an additional 20 years and may apply for renewal as early as 20 years before expiration of the current license. The decision whether or not to seek license renewal rests entirely with the licensee and typically is based on the plant's economic situation and whether it can meet NRC requirements. To date, the NRC has issued renewed licenses for 59 reactors and is reviewing applications to renew an additional 20 units. Approximately three-quarters of the licensed reactors in the United States have either received renewed licenses or are under review for license renewal.

License renewal requirements for power reactors are based on two key principles:

- 1)The regulatory process for currently operating plants is adequate to ensure that they will continue to maintain adequate levels of safety during extended operation, with the possible exception of detrimental effects of aging on certain systems, structures, and components, and a few other issues that may arise during the period of extended operation.
- 2)Each plant's licensing basis is required to be maintained during the renewal term in the same manner and to the same extent as during the original licensing term.

The license renewal process proceeds along two tracks, one for review of safety issues (in accordance with the requirements of 10 CFR Part 54), and the other for environmental issues (in accordance with 10 CFR Part 51). An applicant must provide the NRC an evaluation that addresses the technical aspects of plant aging and describes the ways those effects will be managed. It must also prepare an evaluation of the potential impact on the environment if the plant operates for another 20 years. The NRC reviews the application, documents its evaluations in a safety evaluation report and supplemental environmental impact statement, and performs verification inspections at the applicant's facilities. The intent of the inspection is to ensure the consistency of the applicant's programs to manage aging within the current licensing basis and support the conclusion that there is reasonable assurance that the applicant's aging management programs provide an adequate basis for renewing the license for an additional 20 years. The results of the staff's inspection are documented in a publicly available inspection report. The Advisory Committee on Reactor Safeguards conducts an independent safety review of LRAs and NRC staff evaluations and forwards its recommendation to the Commission. If a renewed license is approved, the licensee must continue to comply with all existing regulations and commitments associated with the current operating license as well as those additional activities required as a result of license renewal. Subsequent to the issuance of a renewed license, another inspection is performed in three phases to verify that the license conditions and license renewal commitments are being implemented. Licensee activities continue to be subject to NRC oversight in the period of extended operation.

The review of a license renewal application is scheduled to take 22 months if no hearing is required and 30 months with a hearing. For nonstandard applications, the review is completed on a plant-specific schedule agreed upon with the applicant.

Extensive guidance has been prepared by the NRC, with stakeholder involvement, for implementing the rules for license renewal (10 CFR Parts 51 and 54). These guidance documents, available for both the safety and environmental reviews, greatly improve the efficiency and effectiveness of the process for an applicant to prepare its application and for the staff to perform its review.

The NRC encourages public participation in the license renewal process. A number of meetings are held in the vicinity of the plant to provide the public with information on the license renewal process, solicit input on the environmental review, and to provide the results of the NRC's inspections. The license renewal application and subsequent correspondence regarding the application are available to the public from the NRC's Public Document Room or through the NRC Web site's (<http://www.nrc.gov>) Agency-wide Documents Access and Management System (ADAMS). NRC evaluations, findings, and recommendations are published when completed. Under the Atomic Energy Act, as amended, the public also has the opportunity to request a formal adjudicatory hearing. Concerns by members of the public may be litigated in an adjudicatory hearing if any party that would be adversely affected requests and is granted a hearing. To help disseminate information to the public and future applicants, the NRC maintains a renewal Web site (at <http://www.nrc.gov/reactors/operating/licensing/renewal.html>) that provides information and access to documents related to the license renewal process, regulations, guidance documents, public involvement, and the status of current and past license renewal applications.

# IRRS Question and Response Report

Question No: 088

Module 05: Authorization

## Question

How does the regulatory body confirm that the licensee is complying with any conditions the regulator has made at the time issuing the authorization (e.g., completion of agreed activities, submission of documents, limits to operation)?

## Response

In 10 CFR 50.54 and 10 CFR 50.55, "Conditions of Construction Permits, Early Site Permits, Combined Licenses, and Manufacturing Licenses," the NRC specifies conditions for all nuclear reactor operating licenses issued. The NRC holds licensees responsible for abiding by these regulations. This includes completion of all agreed upon activities, submission of documents required by regulations, and ensuring that the facility is operated within the safety limits as prescribed in the technical specifications and FSARs. Licensees are required to provide periodic updates to their FSARs; make prompt verbal notifications under 10 CFR 50.72 for various events such as declaring an emergency or initiation of any nuclear plant shutdown required by the technical specifications; and also make written reports for various events as described in 10 CFR 50.73.

Through its inspection program, the NRC periodically inspects all facilities it licenses to ensure that their activities meet NRC regulations and the terms of their licenses. The NRC verifies, through scrutiny of carefully selected samples, that activities are properly conducted and equipment properly maintained to ensure safe operations. These inspections vary in scope and frequency according to the relative hazard of the authorized activities. Throughout the construction period and operating life of a nuclear power plant, for example, numerous inspections are conducted each year. Inspections are performed on power reactors under construction, in test conditions, and in operation. Inspections continue throughout the operating lifecycle of a nuclear facility.

For nuclear power plants and certain fuel cycle facilities, the NRC inspection program includes the work of NRC resident inspectors, who are stationed at the site on a full-time basis and provide a continual inspection and regulatory presence. Additionally, inspections by specialists based in regional offices and NRC Headquarters are also performed to review plant security, emergency planning, radiation protection, environmental monitoring, periodic testing of plant equipment and systems, fire protection, construction activities, and other more specialized areas. Some of these programs are detailed as conditions of the license. Special team inspections may also be performed to focus on a specific activity or to look at a specific operating problem or accident. All inspections and the findings by the inspectors are documented in inspection reports. These reports are sent to the facility and, unless they contain sensitive information, made publically available.

Regulatory commitments are managed and tracked by the licensee. Every 3 years, the NRC staff conducts an audit to ensure that the licensee has properly managed regulatory commitments. A summary of the audit findings are provided to the licensee, which may identify gaps in its configuration control program.

# IRRS Question and Response Report

Question No: 089

Module 05: Authorization

## Question

Does the Regulatory Body issue guidance to the operator on the format and content of documents to be submitted in support of an application for authorization relating to waste and spent fuel management and decommissioning, if so, what is the guidance based on? What information is required at each stage?

## Response

The NRC regulates the management, storage, and disposal of radioactive waste produced as a result of NRC licensed activities in the United States. Commercial power plant radioactive waste is generally divided into two types, high-level and low-level waste. High-level waste primarily refers to spent reactor fuel. Low-level waste refers to other radioactive waste that has either become contaminated with radioactive material or activated through exposure to neutron radiation. Low-level waste can include such items as protective clothing, rags, mops, filters, medical swabs, and animal tissue. It can also include highly radioactive discarded parts from nuclear reactors.

The NRC's regulations are found in 10 CFR, Chapter I. In 10 CFR Part 50, the NRC sets forth requirements for production and utilization facilities such as commercial power reactors. In 10 CFR Part 20, the NRC sets forth general standards for protection of both workers and the public. This applies to operating reactors as well as operating radioactive waste facilities. Appendix G, "Requirements for Transfers of Low-Level Radioactive Waste Intended for Disposal at Licensed Land Disposal Facilities and Manifests, to 10 CFR Part 20 details the requirements for transferring waste from a generator to a disposal facility. In 10 CFR Part 51, the NRC sets forth general standards for environmental protection that are applicable to all licenses. In 10 CFR Part 60, "Disposal of High-Level Radioactive Wastes in Geologic Repositories," and 10 CFR 63, "Disposal of High-Level Radioactive Wastes in a Geologic Repository at Yucca Mountain, Nevada," apply to requirements for a high-level waste repository. In 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste," the NRC provides specific standards for siting, operating, and closure of a low-level radioactive waste facility. Prospective licensees must conform to all applicable NRC regulations unless they have an approved exemption.

For power reactors, consideration for the generation of radioactive waste and spent fuel management is factored into the NRC's rules and regulations as well as the facility licensing process.

Applicants are required to address safety issues relevant to facility operation, spent fuel handling and storage, radiological source term, as well as solid, liquid, and gaseous radiological waste management in an application for a power reactor. These areas are specifically part of the SRP and become part of the facility's final safety evaluation report. This report must be maintained up-to-date during a plant's operational lifetime as required by 10 CFR 50.71(e).

For power reactors, high-level waste is initially stored onsite in spent fuel pools, and typically such storage is described in the facility technical specifications. Thus, changes to storage requirements will normally involve the use of the license amendment process. In Generic Letter 78 011, "Review and Acceptance of Spent Fuel Storage and Handling Applications," dated April 14, 1978, the NRC provided (1) additional guidance for the type and extent of information needed by the NRC staff to perform the review of licensee proposed modifications of an operating reactor spent fuel storage pool, and (2) the acceptance criteria to be used by the NRC staff in authorizing such modifications. Should a licensee elect to utilize dry storage, NUREG 1567, "Standard Review Plan for Spent Fuel Dry Storage Facilities," issued March 2000, provides guidance on such applications.

The International Atomic Energy Agency (IAEA) performance criteria state that, prior to authorization, the licensing review for activities that could generate radioactive waste consider the ability to store the radioactive over the facility's lifetime. Regarding high-level waste, the NRC has made a generic assessment of the ability to safely store spent reactor fuel in the "waste confidence" rule. This rule (10 CFR 51.23, "Temporary Storage of Spent Fuel after Cessation of Reactor Operation—Generic Determination of No Significant Environmental Impact") states that spent fuel can be stored safely for at least 30 years beyond the licensed life of operation (including license renewal). It also states that there is reasonable assurance there will be a geologic repository available by 2025. Given the current status of the proposed Yucca Mountain repository, this rule is being reviewed. However, with or without the availability of a repository, the ability to safely store fuel is reviewed during a plant's licensing, with the ability to safely store the fuel in wet, and later dry, storage established. For low-level waste, during initial licensing, the ability to process solid, liquid, and gaseous radioactive waste is established. The SRP gives guidance to the reviewer and the applicant for how to evaluate the combination of processing ability and storage volume to be documented in the plant's safety analysis report. This analysis generally assumes that a low-level waste disposal facility is available. The availability of such facilities varies from plant to plant and state to state.

In the area of spent fuel storage and transportation, guidance has been issued to both reviewers (which is also available to applicants) and to applicants for use when developing applications for spent fuel storage. This guidance is based on the NRC regulations. For storage, either an application for a site-specific license or a certificate of compliance is required. The application must show that the site and storage cask to be used meets the regulations for the specific site. In the case of a general licensee, the licensee may use a previously approved storage cask if the cask design-bases are suitable for use at the nuclear power plant site where it is to be used. The storage cask will already have a Certificate of Compliance showing that it is suitable for use at a generic site.

For radioactive waste management of high-level waste, the NRC has issued guidance to the operator (U.S. Department of Energy (DOE)) for high-level waste disposal via the Yucca Mountain Review Plan. The Yucca Mountain Review Plan provides one approach for demonstrating safety (compliance with the regulations) of a potential repository at Yucca Mountain, Nevada. As appropriate, the review plan cites industrial standards and codes (e.g., American Society for Testing and Materials); however, given the first-of-a-kind nature of geological disposal, the Review Plan discusses the applicable requirements in terms of the scientific and engineering principles that will be used in the review of the operator's license application.

Additionally, the regulations provide specific requirements for the types of information that is to be provided at specific stages of the licensing process—for example, plans for retrieval are provided at the initial stage, whereas design of permanent markers for the disposal facility are provided, for approval, at the time of closure. The regulatory steps in the licensing process are designed such that interdependencies between different stages and steps

# IRRS Question and Response Report

are appropriately considered. Further, the regulations require that radioactive waste cannot be received at the site until such time as the operator has demonstrated that the facility is substantially complete to begin operations of disposing of the waste.

Question No: 090

Module 05: Authorization

## Question

Have the Regulatory Body and each applicant/licensee agreed on the format, quality and standard of documentation to be presented?

## Response

The NRC and each applicant/licensee do not have a single agreed upon format, quality, and standard of documentation; however, there are requirements and guidelines available for the various documents submitted to the NRC. The NRC has established requirements, through 10 CFR, for the content of the various documents that an applicant may submit. Licensees of domestic production and utilization facilities must comply with requirements contained in 10 CFR Part 50. Beyond the requirements of 10 CFR Part 50, the NRC provides guidance for the format, quality, and standard of the documents submitted through NUREGs, RGs, and generic communications. Further direction can be found in industry guidance (e.g., Nuclear Energy Institute guidance), which the NRC has the authority to endorse. Additionally, the NRC uses office instructions to aid in the NRC staff's review of submittals.

The content of applications for construction permits and operating licenses is defined in NRC regulations in 10 CFR 50.33 and 10 CFR 50.34. These regulations also state that applications for operating licenses or construction permits include an evaluation of the facility against the SRP revision in effect 6 months prior to the docket date of the application. The NRC provides guidance on acceptable formats for certain applications in its RGs, such as: RG 1.70, RG 1.179, and RG 1.188. Standard technical specifications are also published for each of the five reactor types as a NUREG series publication. Plants are required to operate within these specifications.

General guidance for submitting documents under 10 CFR Part 50, is provided in 10 CFR 50.4. For documents that amend the license, including the technical specifications, 10 CFR 50.90 and 10 CFR 50.91 provide the applicant with the requirements. Requirements for relief from the American Society of Mechanical Engineers standards are found in 10 CFR 50.55a, "Code and Standards," and the requirements for exemptions from 10 CFR Part 50 are contained in 10 CFR 50.12, "Specific Exemptions." Applicants that wish to change the licensing basis, as approved by the NRC in the FSAR, must follow the requirements of 10 CFR 50.59 to determine if the change can be made without prior NRC approval or if an amendment is required to be submitted to the NRC. If an amendment is required to be submitted to the NRC, it must follow the same requirements as the applications to amend the license. In 10 CFR, the NRC also provides the requirements for less frequent submittals, such as applications for withholding from the public (10 CFR. 2.390, "Public Inspections, Exemptions, Request for Withholding") and emergency plan changes (10 CFR 50.54(q)).

NUREGs (such as NUREG 0800, "Standard Review Plan") provide guidance on what the NRC staff considers when completing its review of applications. Inspection Manual Part 9900, "Technical Guidance," delineates the requirements for a Notice of Enforcement Discretion. Generic communications, such as generic letters, information notices, and regulatory information summaries are used to communicate with stakeholders about generic issues, including generic NRC guidance (i.e., NRC Information Notice 2009 07, "Withholding of Proprietary Information from Public Disclosure," dated March 30, 2009). The Office of Nuclear Reactor Regulation provides its own office instructions, such as LIC 101, Revision 2, "License Amendment Review Procedures," dated December 12, 2002, and LIC 102, Revision 2, "Relief Request Reviews," dated August 24, 2009, which provide the NRC staff with guidance for completing the review of the various documents submitted.

# IRRS Question and Response Report

Question No: 091

Module 05: Authorization

## Question

Is there guidance on decommissioning and clear requirements for a decommissioning plan and any other associated documentation?

## Response

### Summary

NRC regulations and guidance for the decommissioning of power reactors are clear and well defined. In 10 CFR Part 20 the NRC defines the radiological criteria for license termination and in 10 CFR 50.82 defines the license termination process. NRC guidance documents provide detailed information and acceptable programs for complying with the license termination process. The license termination process allows for stakeholder and public involvement.

### Applicable Requirement

Decommissioning radiological safety criteria are in Subpart E, "Radiological Criteria for License Termination," of 10 CFR Part 20, which is also known as the License Termination Rule (LTR). Safety documentation information for each reactor decommissioning stage is described in 10 CFR 50.82. This regulation provides the major steps in the reactor decommissioning process: notification, submittal and review of the PSDAR, submittal and review of the LTP, implementation of the LTP, and completion of decommissioning. At each stage, documentation is provided to support the completion of the stage.

### Staff Implementation

NUREG 1757 provides general guidance for planning and implementing license termination under the LTR. NUREG 1700, Revision 1, provides guidance for NRC staff in conducting safety reviews of LTPs, to ensure the quality and uniformity of reviews and to present a well-defined base from which to evaluate the requirements for terminating the license of a nuclear power plant.

### Guidance to Licensees

Guidance is publicly available information. The primary decommissioning guidance documents are NUREG 1757 and NUREG 1700, Revision 1. In addition, "Staff Responses to Frequently Asked Questions Concerning Decommissioning of Nuclear Power Reactors" reflect the feedback from past public meetings and staff experience regarding decommissioning (NUREG 1628). Additional guidance is provided at <http://www.nrc.gov/what-we-do/regulatory/decommissioning/reg-guides-comm.html>. In addition, NUREG 1757 provides additional detailed information for demonstrating compliance with these regulations. NUREG 1757 was written to provide decommissioning guidance to nonpower reactors but is useful to reactor licensees. The operator is required to prepare the LTP for detailed technical review by the NRC. There are over 40 referenced guidance documents reflected in the guidance in NUREG 1757 that are available to the operator/licensee. These include: NUREG 1496, "Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities," NUREG 1549, "Decision Methods for Dose Assessment To Comply with Radiological Criteria for License Termination," NUREG 1575, Multi-Agency Radiation Survey and Site Investigation Manual (MARISSM)," Revision 1, issued August 2000; and NUREG 5512, "Residual Radioactive Contamination from Decommissioning," Volumes I, II, III, and IV.

### Power Reactor Decommissioning Process

Each power reactor must submit an application for termination of its license within 2 years before the planned license termination date. The LTP is a supplement or equivalent to the FSAR and includes the following:

- a site characterization
- identification of remaining dismantlement activities
- plans for site remediation
- detailed plans for the final radiation survey
- a description of the end use of the site, if restricted
- an updated site-specific estimate of remaining decommissioning costs
- a supplement to the environmental report describing any new information or significant environmental change associated with the licensee's proposed termination activities

In addition, the licensee must demonstrate that the applicable requirements of the LTR be met. The NRC will notice receipt of the LTP and make it available for public comment. In addition, the NRC will hold a public meeting near licensee's facility to discuss the LTP and the LTP review process. The review process is similar to that for material and fuel cycle licensees. The technical review is guided by NUREG 1700. The NRC staff develops a Safety Evaluation Report, and the authorization to complete the decommissioning is approved when the LTP is approved by license amendment. The NRC staff will inspect the licensee during decommissioning operations to ensure compliance with the approved LTP. These inspections will normally include in-process and confirmatory radiological surveys. Decommissioning must be completed within 60 years of permanent cessation of operations unless otherwise approved by the Commission.

# IRRS Question and Response Report

Question No: 092

Module 05: Authorization

## Question

How does the authorization process deal with overall responsibility for safety in the decommissioning process?

## Response

### Summary

The NRC regulations provide a detailed decommissioning process that ensures that the licensee maintains overall safety responsibility for decommissioning operations until license termination. The NRC performs safety evaluations at key stages of the decommissioning process and performs inspections to verify licensee performance. For commercial power reactors, decommissioning operations, dismantling, and decontamination are performed in accordance with a PSDAR that encompasses the licensee's existing, NRC-approved, nuclear, industrial, and radiological safety programs. Although the NRC reviews license amendments requested by the operator, the licensee is ultimately responsible for safety related to the operation and decommissioning of the licensed facility. The licensee must submit an LTP within 2 years of the expected license termination date. The NRC performs a detailed review of the LTP and, if satisfactory, generates a safety evaluation leading to the approval of the LTP. Upon completion of the decommissioning, in accordance with the LTP, the licensee submits the final status surveys to the NRC. The NRC then evaluates the final status surveys as part of the safety evaluation for determining compliance with the license termination criteria.

Decommissioning radiological safety criteria are in NRC regulations at 10 CFR Part 20, Subpart E, the LTR. Other regulatory requirements related to decommissioning are found in the individual 10 CFR subparts associated with each particular type of license. Staff guidance for reviewing licensee activities and licensing requests is available in published NUREGs and NRC staff internal procedures. Instructions for decommissioning-related inspections are documented in NRC Inspection Manual Chapter 2561, "Decommissioning Power Reactor Inspection Program," dated April 14, 2003. Similarly, guidance to licensees is provided in published NUREGs and RGs.

### Power Reactor Decommissioning Process

The operator is required to prepare the following for reviews by the NRC in accordance with 10 CFR 50.82:  
Notification:

When the licensee/operator has decided to permanently cease operations, the licensee is required to submit a written notification to NRC within 30 days, certifying to the NRC that the nuclear fuel has been permanently removed from the reactor vessel. This certification confirms that the licensee shall continue to conformance with 10 CFR 50.40. This certification requires that the licensee shall comply with NRC license, provides reasonable assurance that the health and safety of the public will not be endangered, assures the common defense and security, and is technically and financially qualified to perform the proposed activities.

Submittal and review of the PSDAR: Before or within 2 years following cessation of operations, the licensee must submit a PSDAR. The PSDAR must include a description and schedule for the planned decommissioning activities, an estimate of the expected costs, and a discussion that provides the means for concluding that the environmental impacts associated with the decommissioning activities will be bounded by appropriately issued environmental impact statements. The NRC will notice receipt of the PSDAR in the Federal Register and make the PSDAR available for public comment. In addition, the NRC will hold a public meeting near the licensee's facility to discuss the PSDAR. The NRC does not approve the PSDAR. The licensee cannot perform any major decommissioning activities until 90 days after the NRC has received the PSDAR. After this period, the licensee can perform decommissioning activities as long as the activities do not foreclose release of the site for unrestricted use, result in significant environmental impacts not previously reviewed, or result in there no longer being reasonable assurance that adequate funds will be available for decommissioning. In taking actions permitted under 10 CFR 50.59 following submittal of the PSDAR, the licensee must notify the NRC in writing before performing any decommissioning activity inconsistent with, or making any significant schedule change from, those actions and schedules in the PSDAR.

License Termination Plan (LTP): Each power reactor must submit an application for termination of its license within 2 years before the planned license termination date. The LTP is a supplement or equivalent to the FSAR. The application must be accompanied or preceded by an LTP submitted for NRC approval. The LTP must include the following:

- a site characterization
- identification of remaining dismantlement activities
- plans for site remediation
- detailed plans for the final radiation survey
- a description of the end use of the site, if restricted
- an updated site-specific estimate of remaining decommissioning costs
- a supplement to the environmental report describing any new information or significant environmental change associated with the licensee's proposed termination activities

In addition, the licensee must demonstrate that the applicable requirements of the LTR (10 CFR 20, Subpart E) will be met. The NRC will notice receipt of the LTP and make it available for public comment. In addition, NRC will hold a public meeting near licensee's facility to discuss the LTP and the LTP review process. The review process is similar to that for material and fuel cycle licensees. The technical review is guided by NUREG 1700. The LTP is approved by license amendment. Similar to the process for material and fuel cycle facilities, NRC staff will inspect the licensee's facility during decommissioning operations to ensure compliance with the approved LTP. These inspections will normally include in-process and confirmatory

# IRRS Question and Response Report

radiological surveys. Decommissioning must be completed within 60 years of permanent cessation of operations unless otherwise approved by the Commission.

Completion of Decommissioning: At the conclusion of decommissioning activities, the licensee will submit a final radiation survey report. The NRC will terminate the license if it determines that the remaining dismantlement has been performed in accordance with the approved LTP and that the final radiation survey and associated documentation demonstrates that the facility and site are suitable for release in accordance with the LTR.

**Question No:** 094

**Module 05: Authorization**

## Question

Is guidance available on the information that must be provided in support of a notification or application for authorization?

## Response

This response assumes that the terminology, "notification or application for authorization," is interchangeable with the term "license application" for the operation of a nuclear reactor. With this understanding, 10 CFR Part 50 or Part 52 governs the issuance of early site permits, design certifications, combined licenses, standard design approvals, and preapplication reviews of site suitability issues. Applications for these issuances must contain the applicable information required by 10 CFR 50.34, either wholly or partially, and any other information required by the respective sections of 10 CFR Part 52.

Guidance is provided to applicants through RG 1.206, "Combined License Applications for Nuclear Power Plants." This regulatory guide addresses the information, format, and areas of concern that are applicable to a license application. In addition, various regulatory guides are provided that address environmental and siting subjects, as well as interim staff guidance documents on specific topics associated with combined license and design certification applications for new reactors. These guidance documents are available through active links on the NRC public Web site at <http://www.nrc.gov/reactors/new-reactors/regs-guides-comm.html>.

**Question No:** 095

**Module 05: Authorization**

## Question

Has the regulatory body clearly defined and implemented processes that address general conditions for issuing, amending, suspending revoking, etc. licenses?

## Response

The NRC has clearly outlined all steps of the licensing procedure from the application process through issuing the license. These steps are defined in regulations, RGs, NUREGs, and other documents. The regulations governing commercial reactor licenses are contained in 10 CFR Parts 50 and 52. Similarly, the regulations governing other types of licenses granted by the NRC are found in other parts of 10 CFR. Once an application has been submitted, the NRC staff reviews the application to verify that it acceptable for review, containing enough information to begin a thorough review of the application. RGs provide guidance on acceptable means of meeting regulatory requirements, while NUREGs publish commonly used criteria used by the staff in performing their reviews. In 10 CFR, the NRC provides for a structured process in reviewing, issuing, and amending licenses as well as suspending, revoking, and terminating licenses. Precedent staff actions also provide insight into licensing activities. The NRC staff has written internal procedures to implement the processes defined by the regulations.

Where needed to ensure adequate protection of public health and safety, the NRC may demand immediate licensee action, up to and including a shutdown or cessation of licensed activities. The procedure for issuing an order to institute a proceeding to modify, suspend, or revoke a license or to take other action against a licensee or other person subject to the jurisdiction of the Commission is defined in 10 CFR 2.202. The process to issue a revocation order is outlined in NRC staff internal written procedures and in the NRC Enforcement Policy and the NRC Enforcement Manual. Under statute and NRC regulation, applicants and members of the public have the right to seek Federal court review of the NRC's licensing decisions. (See the response to Question 10.)

# IRRS Question and Response Report

Question No: 096

Module 05: Authorization

## Question

What provisions have been made to help operators understand the regulator's decisions and their jurisdiction?

## Response

The principles and criteria on which NRC judgments and decisions are based are primarily found in the NRC regulations, located in 10 CFR. The NRC has additional documents, such as the NRC Inspection Manual, the NRC Enforcement Manual, RGs, and SRPs, which provide further details on the criteria used for judgments and decisions. These documents are available to the operator, and to the public, from the NRC's public Web site, [www.nrc.gov](http://www.nrc.gov). The NRC also maintains a Public Document Room at the Headquarters building, where operators and members of the public may call or visit to request assistance with locating NRC documents. If the NRC determines that operators need additional information on NRC principles or criteria, the NRC uses its generic communication system to provide the information.

For assessment activities for power reactors, the NRC has a well-defined reactor oversight process, which is explained in NUREG 1649, "Reactor Oversight Process," issued December 2006, with additional details in the NRC Inspection Manual. The NRC's judgments and decisions are provided to the operator in written documents, such as inspection reports, that state the criteria for the judgment. These documents are available to all operators and to the public, unless they involve sensitive matters such as security-related findings.

For review activities, the NRC issues written determinations, typically in the form of safety evaluations. These evaluations state the criteria used for the NRC's decision.

Question No: 097

Module 05: Authorization

## Question

Does the Regulatory Body authorize selected plant personnel, if not, what procedures are used to ensure that plant personnel have adequate qualifications, training and experience?

## Response

The NRC does authorize/license selected plant personnel who control the reactivity or power level of the reactor (called licensed operators), and senior operators, who direct the activities of licensed operators but are also permitted to manipulate the controls. No other plant personnel are authorized or licensed by the NRC, but most key positions are subject to specific qualification, training, and experience requirements and guidelines. (References include 10 CFR 55, Operators' Licenses"; 10 CFR 50.120, "Training and Qualification of Nuclear Power Plant Personnel"; 10 CFR 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants"; and RG 1.8, "Qualification and Training of Personnel for Nuclear Power Plants," which endorses American national Standards Institute (ANSI)/American Nuclear Society (ANS) 3.1 1993, "Selection, Qualification, and Training of Personnel for Nuclear Power Plants," with certain exceptions and additions.)

The SRP (NUREG 0800) provides specific guidance to the NRC staff. Chapter 13, "Conduct of Operations," of the SRP specifically addresses the operating organization, training programs for licensed operators and for nonlicensed staff, operator requalification training, and the use of simulators.

The NRC observes licensed operator requalification training quarterly and inspects the training programs for licensed operators every two years as part of the Reactor Oversight Process (ROP). The inspections include the observation of simulator operating tests and an assessment of operator performance since the last requalification program evaluation (inspection or examination) to determine if performance deficiencies have been addressed through the requalification training program. The NRC may conduct additional training inspections or administer requalification examinations to the licensed operators and senior operators if this is deemed necessary due to poor performance.

The Institute of Nuclear Power Operations (INPO) monitors the implementation of the training programs at power reactors and accredits their operator and technical training programs every 4 years. The NRC assesses the effectiveness of the accreditation process by observing selected INPO-led accreditation team visits and meetings of the INPO National Nuclear Accrediting Board. The NRC documents its assessment in an "Annual Report on the Effectiveness of Training in the Nuclear Industry."

The NRC's regulations in Appendix B to 10 CFR 50 require facility licensees to implement programs that provide for the indoctrination and training of personnel who perform activities that affect quality as necessary to assure that suitable proficiency is achieved and maintained and to maintain records to document the qualifications of personnel. The NRC's training rule (10 CFR 50.120) also requires sufficient records to be kept to maintain program integrity and be available for NRC inspectors to verify the adequacy of the program. Moreover, 10 CFR 55 requires facility licensees to maintain records documenting the participation of each licensed operator and senior operator in the requalification program.