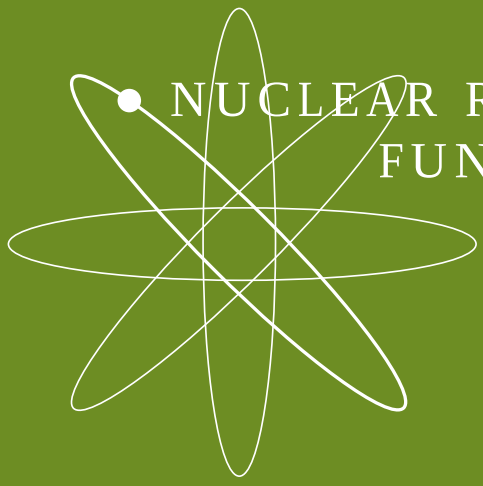

NUCLEAR REGULATORY FUNDAMENTALS

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NRC ORGANIZATION

The United States Nuclear Regulatory Commission ("NRC") is a federal government agency established by the Energy Reorganization Act in 1974. The NRC's mission is to regulate the nation's civilian use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, to promote the common defense and security, and to protect the environment. Under the Atomic Energy Act of 1954, as amended, the NRC regulates the following types of materials:

> *"Source material" means either the element thorium or the element uranium, provided that the uranium has not been enriched in the isotope uranium-235. Source material also includes (1) any combination of thorium and uranium, in any physical or chemical form, or (2) ores that contain by weight one-twentieth of one percent (0.05 percent) or more of uranium, thorium, or any combination thereof. Depleted uranium (left over from uranium enrichment) is considered source material. See 10 C.F.R. Part 40.*
>
> *"Byproduct material" in Section 11e.(1) of the Atomic Energy Act means radioactive material (except special nuclear material) yielded in or made radioactive by exposure to the radiation incident to the process of producing or using special nuclear material. The definition in Section 11e.(2) includes the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content. See 10 C.F.R. Parts 30-35.*
>
> *"Special nuclear material" means plutonium, uranium-233, or uranium enriched in the isotopes uranium-233 or uranium-235. The definition includes any other material that the Commission determines to be special nuclear material, but does not include source material. See 10 C.F.R. Part 70.*

The NRC took over the role of oversight of nuclear energy matters and nuclear safety from the Atomic Energy Commission ("AEC"). Like its predecessor, the NRC oversees reactor safety, reactor licensing and renewal, material safety and licensing, and waste management through storage and disposal. The oversight of nuclear weapons, as well as the promotion of nuclear power, was transferred from the AEC to what is now the United States Department of Energy ("DOE").

The NRC's regulatory mission covers three main areas:

Reactors – Commercial reactors for generating electric power and research and test reactors used for research, testing, and training.

Materials – Uses of nuclear materials in medical, industrial, and academic settings and facilities that produce nuclear fuel.

Waste – Transportation, storage, and disposal of nuclear materials and waste, and decommissioning of nuclear facilities from service.

Commission

The NRC is headed by five Commissioners appointed by the President of the United States and confirmed by the United States Senate for staggered five-year terms. No more than three Commisioners may be from any political party. The Commissioners formulate policies and regulations governing nuclear reactor and materials safety, issue orders to licensees, and adjudicate legal matters brought before them. One of the Commissioners is designated by the President to be the Chairman and official spokesperson of the agency. The current chairman, Dr. Dale Klein, was sworn in on July 1, 2006 for a term ending June 30, 2011.

The NRC Staff

The NRC's Headquarters are in Rockville, Maryland, and the agency has four regional offices:

Region I, located in King of Prussia, Pennsylvania.
Region II, located in Atlanta, Georgia.
Region III, located in Lisle, Illinois.
Region IV, located in Arlington, Texas.

These four regions oversee the operation of 104 power-producing reactors, and 36 non-power-producing reactors, as well as materials and fuel cycle licensees under NRC jurisdiction. As part of the regulatory process, the four regional offices conduct inspection, enforcement, and emergency response programs for licensees within their areas.

The Executive Director of Operations ("EDO") is the chief operating officer of the NRC responsible for discharging the operational and administrative functions necessary for the day-to-day operations of the agency. Several NRC offices report to the EDO.

Key EDO offices include:

Office of Federal and State Materials and Environmental Management Programs. Implements agency objectives within the collective framework of the national materials program in coordination with other federal agencies, states, and Native American Tribal governments, the public, and other stakeholders.

Office of New Reactors. Responsible for regulatory activities in the primary program areas of siting, licensing and oversight for new commercial nuclear power reactors under 10 C.F.R. Part 52.

Office of Nuclear Material Safety and Safeguards. Regulates activities relating to the safe and secure production of nuclear fuel used in commercial reactors; the safe storage, transportation and disposal of high-level radioactive waste and spent nuclear fuel.

Office of Nuclear Reactor Regulation. Regulates activities relating to operating commercial nuclear power reactors, and test and research reactors.

Office of Nuclear Regulatory Research. Provides plans, recommendations, management, and implementation of programs concerning nuclear regulatory research.

Office of Enforcement. Regulates the enforcement of NRC requirements.

Office of Investigations. Conducts criminal investigations into NRC findings or allegations made by individuals of wrongdoing, which includes cases of "whistleblower" discrimination. Makes referrals of substantiated criminal cases to the Department of Justice.

Office of Nuclear Security and Incident Response. Develops overall agency policy and provides management direction for evaluation and assessment of technical issues involving security at nuclear facilities, and is the agency safeguards and security interface with other agencies and law enforcement. Develops emergency preparedness policies, regulations, programs, and guidelines for both current and potential reactors.

Advisory Committees and Boards

Advisory Committee on Reactor Safeguards (ACRS)

Congress established the ACRS to provide the NRC with independent expert advice on matters related to the safety of existing and proposed nuclear power plants and on the adequacy of the proposed reactor safety standards. The ACRS's duties include:

Reviewing and reporting on safety studies and reactor facility license and license renewal applications;

Advising the Commission on the hazards of proposed and existing reactor facilities and the adequacy of proposed reactor safety standards; and

Initiating reviews of specific generic matters or nuclear facility safety-related items.

The ACRS is independent of the NRC staff and reports directly to the Commission, which appoints its members. The ACRS membership includes individuals from national laboratories, academia, and industry who possess specific technical expertise along with a broad perspective in addressing safety concerns. At the request of the Commission, the ACRS reviews the NRC's

research activities and provides an annual report to the Commission. Upon request from DOE, the ACRS also reviews and provides reports on U.S. Naval reactor designs. Also upon request, and with the Commission's consent, the ACRS is required to provide advice to the Defense Nuclear Facilities Safety Board.

Advisory Committee on Nuclear Waste (ACNW)

The ACNW was established by the Commission to provide independent technical advice on agency activities, programs, and key technical issues associated with regulation, management, and safe disposal of radioactive waste. The advice includes safety and environmental protection issues in low- and high-level waste, decontamination and decommissioning of facilities, transportation of nuclear materials, and safeguards and security. ACNW's high-level waste issues have principally related to a potential repository at Yucca Mountain, Nevada. The ACNW examines and reports on areas of concern as requested by the Commission and may undertake studies and activities on its own initiative, as appropriate. The ACNW is independent of the NRC staff and reports directly to the Commission, which appoints its members.

Atomic Safety and Licensing Board Panel (ASLBP)

As set forth by Congress in the Atomic Energy Act, individuals or entities that are directly affected by any licensing or enforcement action involving a facility that produces or uses nuclear materials may participate in a hearing. Administrative law judges from the ASLBP generally conduct these hearings. The ASLBP's judges are employees of the NRC, but they are independent from the NRC staff. The judges have no stake in the outcome of a proceeding. The Commission entertains appeals and petitions for review of the decisions of the ASLBP.

NRC Contact Information

Headquarters

PHYSICAL ADDRESS	U.S. Nuclear Regulatory Commission One White Flint North 11555 Rockville Pike Rockville, Maryland 20852-2738
AND	Two White Flint North 11545 Rockville Pike Rockville, Maryland 20852-2738
MAILING ADDRESS	U.S. Nuclear Regulatory Commission Washington, DC 20555-0001
PHONE	7 am-4:15 pm Mon-Fri (ET) 301-415-7000 Toll Free: 1-800-368-5642 TDD: 301-415-5575

Region I

ADDRESS U.S. NRC Region I
475 Allendale Road
King of Prussia, PA 19406-1415

PHONE 9 am-4:15 pm Mon-Fri (ET)
610-337-5000
Toll fee: 1-800-432-1156
TDD: 301-415-5575

Region II

ADDRESS U.S. NRC Region II
Sam Nunn Atlanta Federal Center
23 T85
61 Forsyth Street, SW
Atlanta, GA 30303-8931

PHONE 7 am to 4:15 pm Mon-Fri (ET)
404-565-4400
Toll Free: 1-800-577-8510
TDD: 301-415-5575

Region III

ADDRESS U.S. NRC Region III
2443 Warrenville Road
Suite 210
Lisle, Illinois 60532-4352

PHONE 7 am to 4:45 pm Mon-Fri (CT)
630-829-950
Toll Free: 1-800-522-3025
TDD: 301-415-5575

Region IV

ADDRESS U.S. NRC Region IV
Texas Health Resource Tower
611 Ryan Plaza, Suite 400
Arlington, TX 76011-4005

PHONE 7:30 am to 4:15 pm Mon-Fri (CT)
817-860-8100
Toll Free: 1-800-952-9677
TDD: 301-415-5575

OVERVIEW: FIVE ELEMENTS OF THE NRC REGULATORY PROGRAM

The NRC's regulatory program has five primary elements: regulations and guidance; licensing, decommisions and certification; oversight; operational experience; and support for decisions.

Regulations and Guidance (Standards)

Rulemaking. Creation of regulations that impose requirements that licensees must meet.

Guidance Development. Documents that contain guidance for applicants, licensees, and staff, such as regulatory guides and standard review plans.

Generic Communications. Documents that communicate information to agency licensees and interested stakeholders, such as generic letters and regulatory issue summaries.

Standards Development. Working with standards organizations, the NRC develops consensus standards associated with systems, equipment, or materials used by the nuclear industry.

Licensing, Decommissioning, and Certification (Approvals)

Licensing. The NRC licenses the construction, operation, and decommissioning of commercial reactors and fuel cycle facilities; the possession, use, processing, exporting, importing, and certain aspects of transporting nuclear materials; and waste siting, design, construction, operations, and closure of waste disposal sites. Licenses can be either "general" or "specific."

Decommissioning. In removing a facility or site from service, the NRC works to reduce residual radioactivity to a level that permits the release of the property for unrestricted use or under restricted conditions, and termination.

Certification. In some cases, NRC issues certificates rather than licenses, such as a certification of a spent fuel storage cask or a package used for shipping nuclear material.

Oversight

Inspection. NRC conducts inspections of licensed nuclear power plants, fuel cycle facilities, and radioactive materials activities and operations to ensure licensees meet regulatory requirements.

Enforcement. NRC responses to violations of the NRC regulations that include Notice of Violation, civil penalties, and orders.

Allegations. NRC program whereby individuals can report suspected safety violations.

Investigations. NRC investigation of allegations or NRC findings that involve potential wrongdoing by licensees or applicants for licenses, or their contractors or vendors. Wrongdoing includes deliberate violations of regulations or careless disregard for regulations, or employee discrimination for raising safety/compliance issues.

Assessment of Performance. The NRC uses inspector findings together with objective performance indicators to assess the performance of nuclear facilities.

Operational Experience

Events Assessment. Licensees must send information to the NRC about certain "reportable events" that occur at their facility or during their use of nuclear materials.

Generic Issues. New or revised rules, new or revised guidance, or revised interpretation of rules or guidance to resolve regulatory matters not sufficiently addressed by existing regulations, guidance, or programs.

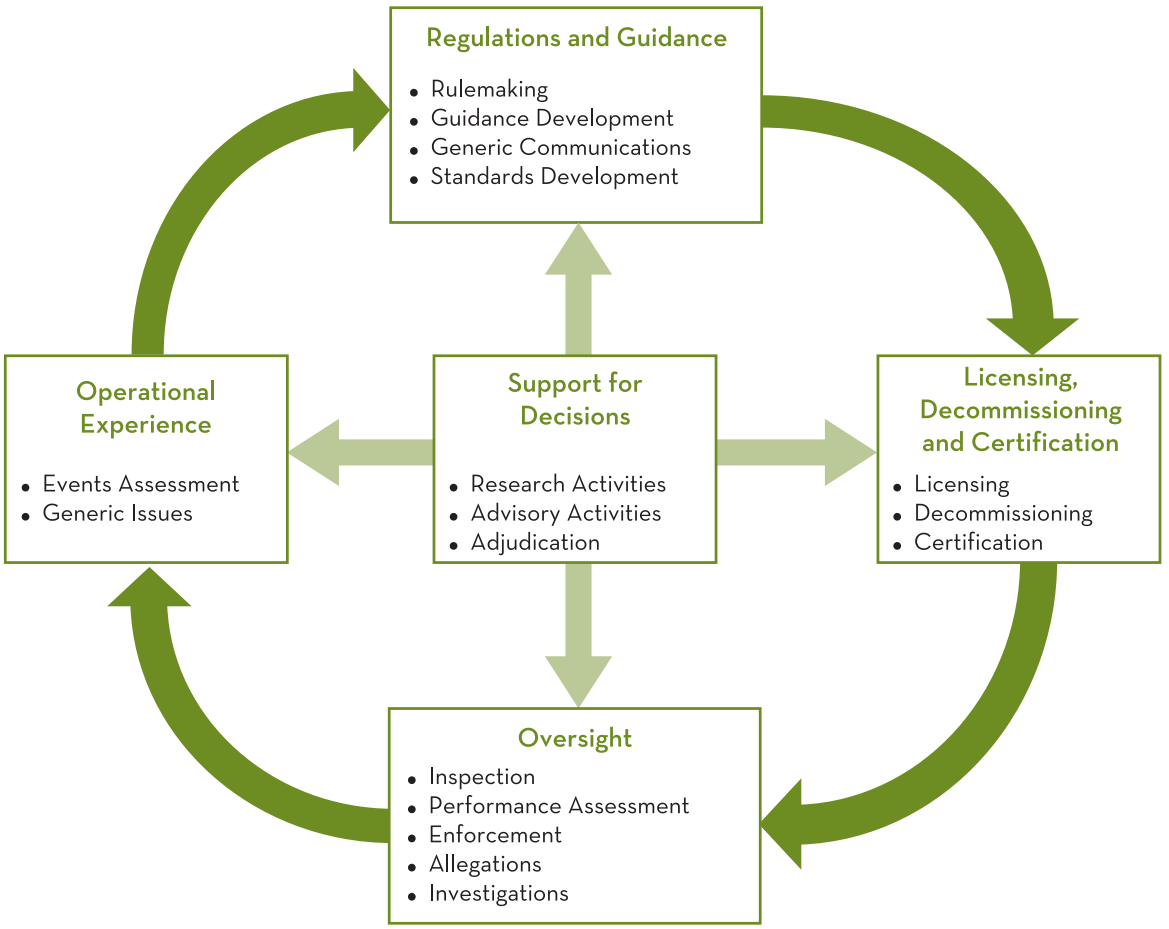
Support for Decisions

Research. Designed to improve the agency's knowledge in matters relating to nuclear reactors, nuclear materials, and radioactive waste.

Advisory Activities. The three principal advisory committees for NRC programs are the Advisory Committee on Reactor Safeguards, the Advisory Committee on Nuclear Waste, and the Advisory Committee on Medical Uses of Isotopes.

Adjudication. Offers a forum for individuals or entities directly affected by any NRC licensing or enforcement action to participate in a hearing before independent judges.

THE FIVE ELEMENTS OF THE NRC'S REGULATORY PROGRAM



HIERARCHY OF NRC "REQUIREMENTS"

Tier 1: Regulatory Obligations

To establish legally binding requirements, the NRC must promulgate those requirements in accordance with the applicable procedures specified in the Administrative Procedure Act ("APA"), 5 U.S.C. §§ 551, et seq. The APA specifically establishes processes for the issuance of requirements by rulemaking or by adjudication. The requirements that are established in accordance with the APA are the only NRC requirements that are directly enforceable and therefore must be met by NRC applicants and licensees to maintain compliance.

Under the APA, the requirements established by adjudication include orders of the Commission, NRC Staff confirmatory orders, or orders of an Atomic Safety and Licensing Board. This category also includes licenses, since they are a form of order issued by adjudication. License requirements include license conditions and technical specifications. (Note that technical specifications are incorporated into the license under 10 C.F.R. § 50.36(b).) In this regard, see 10 C.F.R. § 50.110, which implements Section 234 of the Atomic Energy Act and provides that enforcement action may be taken for any violation of a term, condition, or limitation contained in the license. Licensee-initiated deviations are subject to an appropriate licensing/change process (e.g., petitions for rulemaking under 10 C.F.R. § 2.802, exemptions under 10 C.F.R. § 50.12, and license amendments under 10 C.F.R. § 50.90).

The second type of legally binding obligation, also referenced in 10 C.F.R. § 50.110, includes rules or regulations issued following a rulemaking in conformance with the requisite procedures of the APA. Generally, an "informal" rulemaking involves notice and comment procedures under APA Section 553. Thus, an agency must first (1) publish a general notice in the Federal Register, (2) give interested persons an opportunity to participate in the rule making through submission of written data, views, or arguments, and (3) incorporate in the rules adopted a concise general statement of their basis and purpose. Rules or regulations are published in the Code of Federal Regulations.

Tier 2: Interpretive Rules/Policy Statements

Under the APA, "interpretive rules" are exempt from the standard notice and comment requirements that apply to a rulemaking. An agency "interpretive rule" can be issued to advise the public on an agency's construction of its authorizing statute or a regulation. An interpretative rule, however, is a "clarification or explanation of existing laws or regulations rather than a substantive modification [of existing regulations] or adoption of new regulations." Distinguishing between interpretive rules and rules subject to Section 553 notice and comment is a case-specific endeavor. An interpretative rule is normally thought of as one that allows agencies to explain ambiguous terms in legislative enactments without having to undertake cumbersome proceedings.

The line between a legislative or substantive rule and an interpretive rule is one, as many courts have noted, that is far from clear. A substantive rule may be distinguished from an interpretative rule both by its legal effect — it is mandatory rather than advisory — and by its content — it creates, rather than clarifies law. The Supreme Court has suggested that either of these features (effect or content) may be sufficient to qualify a rule as substantive, and to therefore require APA process. Courts have also looked at the impact that the rule might have on those outside government. If the rule affects substantive rights, then that weighs in favor of treating it as substantive.

Similarly, a general statement of policy is also exempt under the APA from the notice and comment procedure. A policy statement does not establish a "binding norm" but rather announces the agency's tentative intentions for the future. It leaves the agency and its decision makers free to exercise discretion and does not impose any rights or obligations. Policy statements under the APA are generally intended to guide the agency staff in the exercise of its discretionary power. The NRC, however, utilizes policy statements to guide the staff (see, for example, the Enforcement Policy) and to set expectations for licensees (see, for example, the Safety Conscious Work Environment Policy).

Neither an interpretative rule nor a policy statement is directly enforceable. Any action to enforce the interpretation or policy in a specific case must be by subsequent rule or order issued in accordance with the APA and subject to the NRC's Backfit Rule, 10 C.F.R. § 50.109.

Note that *changes* in agency policy may also fall in a gray area under the APA between Tier 1 and Tier 2. Courts often require that an agency notify the public of changes in agency policy if they significantly alter an agency's position, even though the agency was not obligated to conduct notice and comment when it first developed the policy. The purpose of such rules of law is to protect individuals in the regulated community who rely on agency pronouncements of policy and are entitled to "know the rules" by which the regulatory program will be governed.

Tier 3: NRC Staff Interpretations

The NRC staff interprets NRC requirements (e.g., rules or regulations) on a routine basis, on either a generic or site-specific basis. The NRC staff does so in either generic guidance documents (e.g., NUREGs, Regulatory ("Reg.") Guides, Branch Technical Positions) or in

BACKFIT RULE

The Backfit Rule, 10 C.F.R. § 50.109, is intended to provide for a formal, systematic, and disciplined review of new or changed NRC positions before imposing them on licensees. The backfit rule imposes limits on a broad scope of NRC actions involving nuclear power plants and enhances regulatory stability by ensuring that changes in regulatory staff positions are justified and suitably defined. The backfit rule states:

> *Backfitting is defined as the modification of or addition to systems, structures, components, or design of a facility; or the design approval or manufacturing license for a facility; or the procedures or organization required to design, construct or operate a facility; any of which may result from a new or amended provision in the Commission rules or the imposition of a regulatory staff position interpreting the Commission rules that is either new or different from a previously applicable staff position.*

Unless a backfit meets one of the exceptions to the backfit rule, a backfit analysis is required and the NRC must determine, based on that analysis, whether the backfit will provide a substantial increase in overall protection of the public health and safety and that the direct and indirect costs of licensees are justified in view of the increased protection. The exceptions to the backfit rules are:

(1) Modification necessary to bring a facility into compliance with a license or the rules and orders of the Commission, or into conformance with written commitments by the license ("compliance exception");

(2) Regulatory action necessary to ensure that the facility provides adequate protection to the public health and safety; and

(3) Regulatory action involving the defining or redefining the level of protection adequate to protect the public health and safety.

Common obstacles to successful backfit appeals by licensees include disagreements over whether there is a new or different Staff position and differing interpretations of what constitutes a modification necessary to ensure compliance. In addition, licensees have expressed concern that the NRC Staff may avoid application of the backfit rule through generic communications that strongly suggest, but fall short of requring, licensees to take certain actions.

case-specific actions (e.g., Safety Evaluations, inspection reports, enforcement actions). These interpretations, however, are not issued in accordance with the APA and, until they are imposed in an order, they are not legal requirements. Enforceability of NRC staff interpretations flows from the underlying regulatory obligations, not from the NRC guidance document itself. Because guidance documents are not requirements, NRC staff interpretations in these documents are subject to challenge.

For example, it is well-established that the NRC's various regulatory guidance and information documents do not (in and of themselves) have the force of legally binding requirements. A licensee is free either to rely on the NUREG or Reg. Guide approach, or to take alternative approaches to meet the legal requirements. Methods and solutions different from those set out in the guides will be acceptable if they provide a basis for the findings requisite to the issuance or continuance of a permit or license by the Commission.

Tier 4: Generic Communications/Information Requests

Generic communications and information requests related to safety, operating experience, or other matters are not issued in accordance with APA requirements and cannot be used to directly establish legally binding requirements. However, these documents are often a prelude to a legally binding requirement, such as rule or an order. For example, responses to a request for information under 10 C.F.R. § 50.54(f) or a Bulletin may lead the NRC to decide that new actions are required for safety or compliance. Any new or modified requirements would be established in accordance with the APA and the Backfit Rule in 10 C.F.R. § 50.109. However, as a practical matter, licensee commitments made in response to these communications and requests are often treated by the NRC as a substitute for a more formal APA process to impose a requirement.

Specific Examples of the Items in the Regulatory Hierarchy

DOCUMENT TYPE	DEFINITION
	Tier 1: Regulatory Obligations
Orders	An Order is a written NRC directive to modify, suspend, or revoke a license; to cease and desist from a given practice or activity; or to take such other action as NRC requires. Orders are governed by 10 CFR 2.202. Orders can be considered either (1) compliance orders or (2) safety orders. *Source: LIC 106, "Issuance of Safety Orders," dated December 17, 2003*
Rules/Regulation	Regulations are promulgated by notice and comment rulemaking. Published in Federal Register and Code of Federal Regulations. *Reference: Administrative Procedure Act, Section 553(d)*
	Tier 2: Interpretative Rules/Policy Statements
Office of General Counsel Interpretations	Formal written interpretations of the meaning of regulations and associated Commission policy. *Source: 10 CFR § 50.3; Project Manager's Handbook, 2001*
Policy Statements	Published statement of official agency policy. Published in the Federal Register. Notice and comment opportunity normally provided, but not required under the APA. *Reference: Administrative Procedure Act, Section 553(d)*
	Tier 3: NRC Staff Interpretations (Generic and Case-Specific)
Regulatory Guides	Regulatory guides are normally issued to define NRC-accepted approaches that licensees may take to comply with regulatory requirements. The regulatory guides (or parts thereof) may also provide sufficient information to help the NRR staff perform its function. These guides provide advice for preparing a license application. They describe acceptable methods of implementing NRC 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 and licenses. An NRC licensee may commit to following a regulatory guide when it receives or modifies its license. *Source: NUREG/BR-0010, "Citizen's Guide to U.S. Nuclear Regulatory Commission Information"*
Standard Review Plan ("SRP")	Developed to ensure consistency of reviews and to ensure technical adequacy of the licensee's submittal. SRPs address: (1) responsibilities of NRC staff reviewers, (2) matters that are reviewed, (3) the Commission's regulations and acceptance criteria necessary for the review, (4) how the review is accomplished, (5) the conclusions that are appropriate, and (5) the implementation requirements. SRPs document approaches that licensees may take to comply with regulatory requirements. The SRP may provide sufficient information about a review process or procedure (in addition to specific technical requirements and review criteria) to help the NRR staff perform its function. *Source: NUREG/BR-0010; LIC-200, Rev. 3, "[SRP"] Process, June 25, 2004*

NUREGs	The NRC NUREG series includes staff and contractor reports on scientific, technical, and administrative information dealing with licensing and regulation of nuclear facilities and materials. These publications present information supporting regulatory decisions, guidance for meeting regulations, results of task force investigations of specific topics or incidents, results of research programs, resolution of GSIs, analyses of certain regulatory programs, proceedings of conferences and workshops. *Source: NUREG/BR-0010*
Review Standards	Documents establish standardized review guidance for the staff's reviews of applications to enhance the consistency, quality, and completeness of the reviews. It serves as a tool for the staff's use when processing applications in that it provides detailed references to various NRC documents containing specific information related to the areas of review. It also makes available to licensees the guidance used by the staff for reviewing and accepting applications. *Source: RS-001, "Review Standard for Extended Power Uprates," dated December 2003*
Interim Staff Guidance ("ISG")	ISGs are issued by a specific project office to clarify a SRP or to address issues not discussed in an SRP. *Source: http://www.nrc.gov/reading-rm/doc-collections/isg/*
Management Directives	Management Directives specify policy, objectives, responsibilities, authorities, and other requirements in specific functional areas. They are formal issuances that guide, inform, and instruct NRC employees in the performance of their jobs and communicate policies to enable employees to work effectively within the agency, with other agencies, and with the public. *Source: Management Directive ("MD") 1.1, "Management Directives System," June 2001*
Branch Technical Position ("BTP")	BTPs represent guidelines intended to supplement the acceptance criteria established in Commission regulations, guidelines presented in Regulatory Guides, and recommendations presented in applicable standards. As technical problems or questions of interpretation arise in the detailed reviews of plant designs, the staff must determine an acceptable resolution for each such case to complete its review of a particular application. Where the same technical problem or question of interpretation arises in several cases, the staff's determination on the point at issue is formalized in a BTP. The BTP is primarily an instruction to staff reviewers that outlines an acceptable approach to the particular issue and ensures a uniform treatment of the issue by staff reviewers *Source: NUREG-0800, "[SRP], Appendix 8-A, July 1981*
NRR Office Instructions	Office instructions are developed for (1) significant, repetitive activities that include responsibilities for two or more NRR divisions (e.g., licensing actions). (2) important activities or responsibilities that are not adequately addressed by higher or equivalent-level guidance documents (including management directives, regulatory guides, inspection manual) (e.g., office-level administrative procedures specific to NRR). *Source: ADM-100, Rev. 1, "Preparing and Maintaining NRR Office Instructions," May 2002*
Regulatory Issue Summary (RIS)	RISs are generic communications that are used by NRC staff to (1) document NRC endorsement of the resolution of issues addressed by industry-sponsored initiatives, (2) solicit voluntary licensee participation in staff-sponsored pilot programs, (3) inform licensees of opportunities for regulatory relief, (4) announce staff technical or policy positions not previously communicated to the industry or not broadly understood, (5) address all matters previously reserved for administrative letters, (6) announce the issuance and availability of regulatory documents (topical reports, NUREG-type documents and memoranda documenting the closeout of Generic Safety Issues), (7) announce changes in agency practices that could impact licensees, and (8) request the voluntary participation of licensees in staff-sponsored pilot programs. *Source: LIC 503, Rev.2, "Generic Communications Affecting … Licensees," November 2004*
Enforcement Guidance Memoranda (EGMs)	EGMs are used to accommodate changes in the enforcement process and to provide expedited enforcement guidance. EGMs may add guidance for Enforcement Policy application, revise existing guidance on processing enforcement actions, or transmit temporary guidance. EGMs normally introduce the new guidance with a brief background discussion and provide details of the new guidance and a discussion of application. *Source: NRC Enforcement Manual*
Director's Decisions	A Director's Decision is the official response to a Section 2.206 petition. It is issued by the director of the appropriate office that addresses the concerns raised in the petition. A Director's Decision includes the professional staff's evaluation of all pertinent information from the petition, correspondence with the petitioner and the licensee, information from any meeting, results of any investigation or inspection, and any other documents related to the petition issues. *Source: MD 8.11, " "Review Process for 10 CFR 2.206 Petitions," dated October 2005*
Informal Interpretations	Interpretations of the regulations, license conditions, technical specifications and FSARs by Project Managers after consultation with the Office of General Counsel and others. *Source: Project Manager's Handbook, 2001*

Task Interface Agreements (TIA)	A TIA is a request for technical assistance from a Region or another NRC office. A TIA contains questions on subjects within the scope of NRR's mission and responsibilities. Such requests may be initiated in response to a generic issue, a policy issue, a specific plant event, an inspection finding, or an issue identified by a licensee. The requesting organization may be seeking information on specific plant licensing bases, regulatory requirements, NRR technical positions, or the safety or risk significance of particular plant configurations or operating practices. *Source: COM-106, Rev. 1, "Control of Task Interface Agreements," December 2002*
Enforcement Actions	Enforcement Actions are issued in accordance with the NRC Enforcement Policy. Notices of Violation must cite a regulatory obligation. However, a violation can be based on — and represent — an interpretation of what is required for compliance or safety, subject to challenge.
	Tier 4: Generic Communications/Information Requests
10 CFR 50.54(f) Letters	Pursuant to 10 C.F.R. § 50.54(f), the NRC requests information needed for NRC staff to review situations that may involve serious questions regarding the safety of the plant (e.g., unreviewed safety question) and that may lead to modification, suspension, or revocation of the license. *Source: Project Manager's Handbook, 2001*
Bulletins	Bulletins are now used to address significant issues having generic applicability that also have great urgency. A bulletin requests information from, requests specified action by, and requires a written response in accordance with Section 182.a. of the AEA and 10 C.F.R. § 50.54(f), from the addressees regarding matters of safety, safeguards, or environmental significance. The addressees may be asked to take compensatory action that is commensurate with the urgency of the issue being addressed, and provide requested information and perform and submit analyses by a specified time. A bulletin may not request continuing or long term actions. A bulletin may request new or revised licensee commitments that are based on analyses performed and licensee-proposed corrective actions; a bulletin may not require licensee commitments. To the extent that circumstances permit, NRC staff will interact with the nuclear industry on the issue being addressed. *Source: LIC 503, Rev. 2*
Generic Letters	A Generic Letter is now used to address an emergent or routine technical issue having generic applicability. The NRC staff will either (1) interact with the nuclear industry on the issue and will conclude that a generic communication is an appropriate means to effect resolution, or (2) will conclude that there is a risk-significant compliance matter that should be brought to the attention of the nuclear industry without extensive prior interaction. A generic letter may request information from and/or request specified action by the addressees regarding matters of safety, safeguards, or environmental significance. The addressees may be asked to accomplish the actions and report their completion by letter, with or without prior NRC approval of the action taken. A generic letter may request that analyses be performed and, as appropriate, submitted for staff review, that descriptions of proposed corrective actions and other information be submitted for staff review, and that corrective actions be taken by a specified time. A generic letter may request new or revised licensee commitments based on analyses performed and proposed corrective actions but may not require licensee commitments. NRC staff may exercise discretion in preparing information requests by not always requiring that the written response be submitted in accordance with Section 182a of the AEA and 10 C.F.R. § 50.54(f). *Source: LIC 503, Rev. 2*
Information Notices	Information Notices are now used to inform the nuclear industry of significant, recently identified, operating experience. Information notices should not convey or imply new requirements or new interpretations, and or request information or actions. A public comment period is not required. *Source: LIC 503, Rev. 2*
Requests for Additional Information (RAIs)	RAIs are employed on a case-specific basis in the context of a request for an agency approval. RAIs enable the NRC staff to obtain all relevant information needed to make a decision on a licensing action request that is fully informed, technically correct, and legally defensible. RAIs are necessary when the information was not included in the initial submittal, is not contained in any other docketed correspondence, or cannot reasonably be inferred from the information available to the staff. RAIs should be directly related to the applicable requirements related to the amendment application, and consistent with the applicable codes, standards, regulatory guides, and/or the applicable SRP sections. RAIs should not be used as general information requests or as a means to encourage commitments from licensees. RAIs should not interfere with responsibility to make sound safety decisions. *Source: LIC 101, Rev. 3, "License Amendment Review Procedures," February 2004*
Safety Evaluations	A Safety Evaluation Report (SER) is prepared in a case-specific context in response to a request for an NRC approval (e.g., a license amendment request). The SER sets forth the technical, safety, and legal basis for the NRC's disposition of a license amendment request. The SER should provide sufficient information to explain the staff's rationale to someone unfamiliar with the licensee's request. Implicitly, the SER sets forth the Staff's position on the adequacy of the application to establish compliance with applicable NRC requirements. *Source: Source: LIC 101, Rev. 3, February 2004*

LICENSING ACTIVITIES

Initial Licenses

The NRC licenses the following categories of activities:

> *Construction, operation, and decommissioning of commercial reactors and fuel cycle facilities;*
>
> *Possession, use, processing, exporting, importing, and certain aspects of transporting nuclear materials and waste; and*
>
> *Siting, design, construction, operation, and closure of waste disposal sites.*

There are two primary types of NRC licenses: a general license and a specific license. A *general license,* as provided by regulation, grants authority to a person for certain activities and is effective without the filing of an application with the Commission or the issuance of a licensing document to a particular person. NRC rules establish many general licenses, including a general license for NRC licensees to transport licensed nuclear material in NRC-approved containers (10 C.F.R. § 71.12) and a general license for the storage of spent fuel in NRC-approved casks at power reactor sites (10 C.F.R. § 72.210).

A *specific license* is issued by the NRC to a single specified applicant, such as the operating license issued to nuclear power reactors. The licensing process for specific licenses includes approving the initial license, subsequent license modifications, and license renewals. To be specifically licensed to use nuclear materials or operate a facility that uses nuclear materials, an entity or individual must submit an application to the NRC. The staff reviews this information, using standard review plans, to ensure that the applicant's assumptions are technically correct and that there is reasonable assurance that the license, if issued, provides adequate protection of the public health and safety and is not be inimical to the common defense and security. The NRC Staff's determination on the technical and safety aspects of an application are documented in a Safety Evaluation Report ("SER").

During the licensing process, the NRC Staff also conducts an environmental review as required by the National Environmental Policy Act ("NEPA"). The NRC's implementing regulations for NEPA are found in 10 C.F.R. Part 51 and require the NRC to consider the impacts of a proposed licensing action on the environment. The NRC develops, as required by NEPA, an Environmental Impact Statement ("EIS") for "major Federal actions significantly affecting the quality of the human environment." For example, licensing any nuclear facility is considered a "major Federal action" requiring an EIS. A typical review will include analysis of impacts to air, water, animal life, vegetation, natural resources, and property of historic, archaeological, or architectural significance. The review will also evaluate cumulative, economic, social, cultural, and other impacts and environmental justice.

The EIS process begins when an applicant submits, as part of its application, an Environmental Report. The NRC issues a Notice of Intent to prepare an EIS in the *Federal Register* and will schedule at least one public Scoping Meeting. Scoping meetings are held in the vicinity of the affected community to provide a forum for members of the public to express their opinion and provide information for the environmental review. These meetings are often held to help NRC identify issues to be addressed in an Environmental Impact Statement and typically involve state and local agencies, Indian Tribes, or other interested people who request participation. After conducting its review and the scoping meeting, the NRC publishes a draft EIS for public comment. After considering the comments, NRC publishes a final EIS that includes a discussion of all comments.

Same licensing actions do not require on EIS. Actions may be subject to a "categorical exclusion." Otherwise, the NRC performs an Environmental Assesment ("EA") documenting a finding that the action has "no significant impact."

License Amendments

Whenever a holder of an operating license desires to amend a license, including the Technical Specifications incorporated into the license, an application for a license amendment must be filed with the NRC, as specified in 10 C.F.R. § 50.4, full describing the changes desired. 10 C.F.R. § 50.90. Regulatory requirements related to the amendment request, including the requirement that an opportunity to request a hearing be offered, are found in 10 C.F.R. § 50.91, "Notice for public comment," and 10 C.F.R. § 50.92, "Issuance of amendment."

Those requirements stem from the "Sholly Amendments" in Section 189a. of the Atomic Energy Act, which state:

> *The Commission may, in the absence of a request by any persons whose interest may be affected, issue an … amendment to an operating license without a hearing, but upon thirty days' notice and publication in the Federal Register of its intent to do so. The Commission may dispense with such thirty days' notice and publication with respect to any application for an amendment to a construction permit or operating license upon a determination by the Commission that the amendment involves no significant hazards consideration.*

The Commission may issue and make immediately effective any amendment to an operating license or any amendment to a combined construction and operating license, upon a determination by the Commission that such amendment involves no significant hazards consideration, notwithstanding the pendency before the Commission of a request for a hearing from any person. Such amendment may be issued and made immediately effective in advance of the holding and completion of any required hearing.

NO SIGNIFICANT HAZARDS CONSIDERATION

A NSHC determination can be made when the proposed amendment would not: (1) involve a significant increase in probability or consequence of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety. 10 C.F.R. § 50.92

To implement those statutory provisions, the Commission's regulations provide that the Commission will publish in the *Federal Register* a notice of proposed action for an amendment for which it makes a proposed determination that there is no significant hazard consideration ("NSHC"). 10 C.F.R. § 50.91(a)(2)(I). For each amendment proposed to be issued, the notice will (A) contain the NRC Staff's proposed determination under the standards for NSHC, (B) provide a brief description of the amendment and facility involved, (C) solicit public comments on the proposed determination, and (D) provide for a 30-day comment period. 10 C.F.R. § 50.91(a)(2)(ii).

The Commission will not make a final determination on NSHC unless it receives a request for a hearing on that amendment request. 10 C.F.R. § 50.91(a)(3). If a final NSHC determination is made, the amendment will be effective upon issuance despite the pendency of any hearing on the amendment. If the final determination is that a significant hazards consideration is involved, the Commission will provide an opportunity for hearing prior to the amendment's issuance. 10 C.F.R. § 50.91(a)(4).

EXEMPTION REQUEST

Unlike a license amendment, a request for an exemption does not trigger the NSHC process. No prior notice or opportunity to request a hearing are required, though an Environmental Assessment must be prepared. Under 10 C.F.R. § 50.12, an exemption may be issued if it is (1) authorized by law, (2) will not present an undue risk to the public health and safety, and (3) is consistent with the common defense and security. However, the Commission will not consider an exemption request unless special circumstances, as defined in § 50.12(a)(2), are present. For more information on the NRC Staff review of exemption requests, see NRR Office Instruction LIC-103, "Requests for Exemption from NRC Regulations."

In certain circumstances, the NRC may dispense with the usual notice process. If a license amendment request is submitted with a need date of more than seven but less than four or five weeks in the future, the request may be processed under the *exigent circumstances* discussed in 10 C.F.R. § 50.91 and use a shortened notice period. For those amendments that require disposition in less time than needed for a two-week comment period, publication of the proposed amendment may be made in local news media rather than the *Federal Register.* Finally,

amendments may be issued in *emergency situations* in accordance with 10 C.F.R. § 50.91(a)(5). The applicant must not have created the emergency and must also explain why the emergency situation could not be avoided.

The Staff performs its technical licensing review of an amendment request in accordance with NRR Office Instruction, LIC-101, "License Amendment Review Procedures." During its review, the NRC Staff may transmit a request for additional information ("RAI") to the licensee, when such information is necessary to ensure that the NRC licensing decision is fully informed, technically correct and legally defensible.

An environmental review may also be necessary for certain proposed amendments, though many amendments requests fall within one of the *categorical exclusions* in 10 C.F.R. § 51.22. An environmental review for a license amendment would normally be documented in an EA.

At the end of its review, the NRC Staff will prepare a Safety Evaluation documenting its review. Ultimately, the Commission will issue the license if it finds that there is reasonable assurance that the public health and safety will not be endangered and that its issuance will not be inimical to the common defense and security or the public health and safety.

LICENSE RENEWAL

As authorized by the Atomic Energy Act, the NRC issues licenses for commercial power reactors to operate for up to 40 years and allows these licenses to be renewed for up to another 20 years. The initial 40-year license term was selected on the basis of economic and antitrust considerations, not technical limitations. Through the license renewal process, the NRC may authorize plans to operate for an additional 20-year term following the expiration of the initial 40-year term. However, the decision whether to seek license renewal rests entirely with nuclear power plant owners.

A nuclear power plant licensee may apply to the NRC to renew its license as early as 20 years before expiration of its current license. There is no limit on how late a licensee may apply for license renewal. However, if the licensee submits a renewal application that is sufficient for the NRC's review at least five years before expiration of its current license and the agency is still reviewing the application at the end of the five years, the plant can continue to operate until the NRC completes its review. If a sufficient application is not submitted at least five years before and the current license expires before the review has been completed, the plant may have to cease operations until the renewal decision is made.

License renewal is expected to take about 30 months, including the time to conduct an adjudicatory hearing, if necessary, or 22 months without a hearing. In some cases the process is completed on a plant-specific schedule agreed upon with the applicant. Upon receipt of a license renewal application, the review is conducted, in general, according to the steps in the following table

Technical Reviews

The NRC began preparing to extend the license term for power plants several decades ago. In 1982, the NRC first established a comprehensive program for Nuclear Plant Aging Research. Based on the results of that research, a technical review group concluded that many aging phenomena are readily manageable and do not pose technical issues that would preclude life extension for nuclear power plants. In 1991, the NRC first published safety requirements for

license renewal as 10 CFR Part 54. After a demonstration program at certain pilot plants, the NRC amended the license renewal rule in 1995. The amended Part 54 clarified the focus of license renewal on *managing the adverse effects of aging*. The rule changes were intended to ensure that important systems, structures and components will continue to perform their intended function during the 20-year period of extended operation.

LICENSE RENEWAL REQUIREMENTS FOR POWER REACTORS ARE BASED ON TWO KEY PRINCIPLES

1. The normal regulatory process is adequate to ensure that currently operating plants 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; and

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.

An applicant must identify all plant systems, structures and components that are safety-related, or whose failure could affect safety-related functions, and that are relied on to demonstrate compliance with the NRC's regulations for fire protection, environmental qualification, pressurized thermal shock, anticipated transients without scram, and station blackout. The applicant is then required to identify all structures and components within the scope of the rule that are *passive and long-lived*. The applicant must demonstrate that the effects of aging will be managed in such a way that the intended functions of passive and long-lived structures and components will be maintained for the period of extended operation. Passive and long-lived structures and components include components such as the reactor vessel, reactor coolant system piping, steam generators, pressurizer, pump casings, and valve bodies.

The detrimental aging effects in active components are more readily detected and corrected by routine surveillance, performance indicators and maintenance. Surveillance and maintenance programs for active components are required throughout the original license term and will continue throughout the period of extended operation. Therefore, active components do not require additional review during the license renewal process. Active components include equipment such as motors, diesel generators, cooling fans, batteries, relays, and switches.

License renewal applicants are also required to identify and update *time-limited aging analyses*. During the design phase for a plant, certain assumptions about the length of time the plant will be operated are incorporated into design calculations for several of the plant's systems, structures, and components. Under a renewed license, these calculations must be shown to be valid for the period of extended operation, or the affected systems, structures and components must be included in an appropriate aging management program.

Key Technical Documents

To guide implementation of the license renewal rule, the NRC prepared NUREG-1801, "Generic

Aging Lessons Learned (GALL) Report." The GALL report documents the basis for determining when existing programs are adequate and when existing programs should be augmented for license renewal.

The GALL report is referenced in NUREG-1800, "Standard Review Plan for License Renewal," as the basis for identifying those programs that warrant particular attention during NRC's review of a license renewal application.

The NRC also issued Regulatory Guide 1.188, which provides the format and content of the safety aspects of a license renewal application.

Environmental Reviews

Separate from the technical requirements of license renewal, the NRC's responsibilities under the NEPA call for a review of the environmental impact of license renewal. In parallel with aging efforts, the NRC pursued a separate rulemaking, incorporated into 10 CFR Part 51, to focus the scope of review of environmental issues.

For license renewal, certain environmental issues ("Category 1 issues")are evaluated generically for all plants, rather than separately in each plant's renewal application. The generic evaluation, NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants" ("GEIS"), assesses the scope and impact of environmental effects that would be associated with license renewal at any nuclear power plant site such as endangered species, impacts of cooling water systems on fish and shellfish, and ground water quality. A plant-specific supplement to the generic environmental impact statement is required for each application for license renewal. The supplement addresses those issues ("Category 2 issues") that must be evaluated site-by-site.

As part of the NEPA process, the NRC conducts a public "scoping" meeting near the nuclear power plant shortly after receipt of the application to identify environmental issues specific to the plant for the license renewal action. The result is an NRC recommendation on whether the environmental impacts are so great that they preclude license renewal. This recommendation is presented in a draft plant-specific supplement to the GEIS which is published for comment and discussed at a separate public meeting. After consideration of comments on the draft, NRC prepares and publishes a final plant-specific supplement to the GEIS.

Key Technical Documents

NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants."

NUREG-1555, "Standard Review Plan for Environmental Reviews for Nuclear Power Plants," Supplement No.1: Operating License Renewal.

Supplement 1 to Regulatory Guide 4.2 identifies the format and content of environmental reports which must accompany license renewal applications.

The status of pending planned applications as well as additional information on license renewal can be found at: http://www.nrc.gov/reactors/operating/licensing/renewal.html.

LICENSE TRANSFERS

With the deregulation of the electric utility industry, there has been greater economic competition in the energy market and as a result, an increased number of requests filed with the NRC for transferring power reactor operating licenses. The NRC regulates, 10 C.F.R. § 50.80, require more NRC review and approval of any "transfer of control" - either directly or indirectly - of a license or a right under a license.

A license transfer is required for: (1) any transfer of an ownership interest in a plant (even if it involves a non-operator); (2) any transfer of operational responsibility (*e.g.,* to a new operating company); or (3) certain "indirect" transfers at a corporate parent level above the licensee.

Below are some common questions on license transfers, the governing NRC regulations, the criteria the agency will evaluate when it examines a license transfer application, and a list of relevant NRC guidance documents.

Common Questions on License Transfers

What is a license transfer?

A "license transfer" moves an NRC license (or the plant) from the control of one legal entity to another. Under the NRC's regulations, a license cannot be transferred without the written consent of the Commission. The NRC has developed guidance, listed below, on what constitutes a "transfer" for purposes of the agency's regulations.

When must a licensee make a transfer request?

Whether a licensee must submit an application to the NRC for a license transfer approval depends on the extent to which operating control is being transferred and the degree of autonomy being granted to the operating company. Again, the NRC has issued guidance documents, listed below, to aid licensees in making a determination as to whether to file a transfer request.

How does a licensee make a transfer request?

A licensee must apply for a license transfer with the Commission. The Commission will then evaluate the application to determine whether it meets certain criteria, also described below.

Do license transfers affect operations?

Not usually. In general, license transfers involve changes in ownership of facilities at a corporate level but do not involve the type of technical issues that would impact operation. Plant personnel, procedures, and policies typically are not part of a license transfer or merger.

Are there different types of license transfers?

Yes. The NRC has received requests for different types of transfers because of the different corporate decisions of its licensees. Some licensees decide to leave the electricity generating business; other licensees decide that they are too small to compete effectively in a market environment and seek merger partners; other licensees form parent holding companies that will allow them to diversify into other areas or markets; and finally, some licensees form nuclear operating company subsidiaries to increase technical focus or take advantage of economies of scale from an operating company running several nuclear plants. Depending on the intended change, licensees may seek: (1) indirect transfers, such as the establishment of a holding company over an existing licensee; (2) direct transfers, such as transfer of an ownership interest held by a non-operating minority owner; (3) the complete transfer of the ownership and operating authority of a single or majority owner.

License Transfer Regulations

The following regulations govern license transfer requests

10 C.F.R. Part 2, Subpart M, (e.g., 10 C.F.R. § 2.1301).

10 C.F.R. § 50.33, Contents of applications, general information.

10 C.F.R. § 50.38, Ineligibility of certain applicants.

10 C.F.R. § 50.40, Common Standards for issuing a license.

10 C.F.R. § 50.75, Reporting and recordkeeping for decommissioning planning.

10 C.F.R. § 50.80, General guidance for transfer to licenses.

10 C.F.R. § 50.140, Financial protection requirements and indemnity agreements.

Key License Transfer Considerations

Technical Qualifications

The NRC determines whether the proposed transfer recipient has the technical expertise to continue to run the plant safely. For indirect transfers, where the licensee itself remains the same, technical qualifications are generally not an issue in the NRC's review. For direct transfers, particularly with respect to sales where the operator changes, the scope of the review will depend on the degree to which the existing plant personnel and organization will change. The NRC relies on 10 C.F.R. § 50.40(b) and guidance documents for making this evaluation.

Financial Qualifications

The NRC reviews the transfer recipient's financial qualifications for operations by using the provisions contained in 10 C.F.R. § 50.33(f). If the transfer recipient is an "electric utility" as defined in the NRC's regulations, no further review of financial qualifications for operations is required. If the proposed transfer recipient is not an "electric utility," the NRC will evaluate sources of revenues and projected five year operating costs with respect to the plant to determine whether the transfer recipient has reasonable assurance of obtaining the funds necessary to operate the plant safely. Under the decommissioning funding assurance review, governed by 10 C.F.R. § 50.75, the NRC determines whether the proposed transfer recipient has demonstrated reasonable assurance that funds will be available for the decommissioning process.

Foreign Ownership or Control

The NRC assesses whether a proposed transfer recipient is owned, controlled, or dominated by a foreign individual or entity. Such foreign ownership, control, or domination is prohibited by Sections 103 and 104 of the Atomic Energy Act (AEA) and by 10 C.F.R. § 50.38. The NRC review process is oriented toward determining that foreign individuals or entities do not control safety-related activities under the license, with an emphasis on protecting the common defense and security of the United States.

Antitrust

Until 1999, NRC practice had been to review license transfer applications for antitrust considerations pursuant to Section 105 of the AEA. However, in 1999, the Commission determined that the AEA does not require or authorize antitrust reviews of post-operating license transfer applications.

Insurance

The NRC reviews license transfer applications to ensure that the proposed transfer recipient has the required insurance and indemnity for off-site liability claims of personal injury and property damage required under Section 170 of the AEA and 10 C.F.R. Part 140. The NRC also ensues that transfer recipients have on-site property damage insurance to help cover reactor cleanup costs after an accident, to the extent required by 10 C.F.R. § 50.54(w).

License Transfer Guidance and Related Documents

Antitrust Standard Review Plan (SRP), NUREG-1574 (Dec. 1997)

Power Reactor Licensee Financial Qualifications and Decommissioning

Funding Assurance, NUREG-1577, Rev. 1 (Mar. 1999)

Management and Technical Support SRP, NUREG-0800 (Nov. 1999)

Integrated SRP on All Aspects of License Transfers, NUREG/BR-0276 (Apr. 2000)

Final Standard Review Plan in Foreign Ownership, Control, or Domination, 64 Fed. Reg. 52355 (Sept. 28, 1999)

Changes Concerning Foreign Ownership, Control, or Domination of Nuclear Reactor Licensees, Regulatory Information Summary (RIS)-00-001 (Feb. 1, 2000)

Criteria for Triggering a Review Under 10 C.F.R. 50.80 for Non-Owner Operator Service Companies, Regulatory Information Summary (RIS)-01-006 (Feb. 15, 2001)

NRC ENFORCEMENT PROGRAM

The NRC's enforcement jurisdiction is drawn from the Atomic Energy Act and the Energy Reorganization Act ("ERA") of 1974, as amended. The AEA authorizes the NRC to conduct inspections and investigations and to issue orders, to revoke licenses under certain circumstances, and to impose civil penalties not to exceed $100,000 per violation per day. The maximum daily civil penalty amount is adjusted every four years by the Debt Collection Act of 1996 and is currently $130,000. NRC regulations governing enforcement are found in 10 C.F.R. §§ 2.201-2.206.

Violations of regulatory requirements are identified through inspections and investigations. All violations are subject to civil enforcement action and may also be subject to criminal prosecution. Unlike the burden of proof standard for criminal actions (beyond a reasonable doubt), for civil enforcement the NRC uses a preponderance of evidence standard (i.e., information that is of greater weight or credibility or is more likely correct than not). After an apparent violation is identified, it is assessed in accordance with the Commission's Enforcement Policy. The goals of the Enforcement Policy are to emphasize the importance of compliance with regulatory requirements, and to encourage prompt identification, and prompt, comprehensive correction of violations. The NRC's Enforcement Policy is updated periodically and maintained electronically on the NRC's website at:

http://www.nrc.gov/what-we-do/regulatory/enforcement/enforce-pol.html

The NRC's Enforcement Manual assists the NRC staff in implementing the Commission's enforcement program consistent with NRC's Enforcement Policy

http://www.nrc.gov/what-we-do/regulatory/enforcement/guidance.html#manual

Sanctions

Recognizing that violations impact various aspects of the agency's regulatory program and have varying levels of significance, the NRC's enforcement framework has graduated sanctions to reflect this diversity. After a violation is identified, the NRC assesses the significance of a violation by considering: (1) actual safety consequences, (2) potential safety consequences,

(3) potential for impacting the NRC's regulatory program, and (4) any willful aspects of the violation. A violation is generally cited in a Notice of Violation ("NOV"), which must state a violation of a binding legal requirement.

Violations are handled in one of two schemes:

Traditional Enforcement. Violations involving misconduct, discrimination, reporting, and configuration management (Section 50.59) are assigned a Severity Level, ranging from Severity Level IV for those of more than minor concern to Severity Level I for the most significant. Severity Level III or above are "escalated" and will be considered for a civil penalty.

Reactor Oversight Process ("ROP"). Findings of a technical nature are assessed through the ROP's Significance Determination Process ("SDP"). They are assigned a color of Green, White, Yellow, or Red based on increasing risk significance. Civil penalties are not applied.

The enforcement program also encompasses two other categories of violations:

Minor Violations. The Commission acknowledges violations of minor safety or environmental concern that are below Severity Level IV violations and below violations associated with Green SDP findings. These minor violations are not assigned a severity level categorization nor an SDP color assessment (and are not normally described in inspection reports), but must still be corrected by licensees.

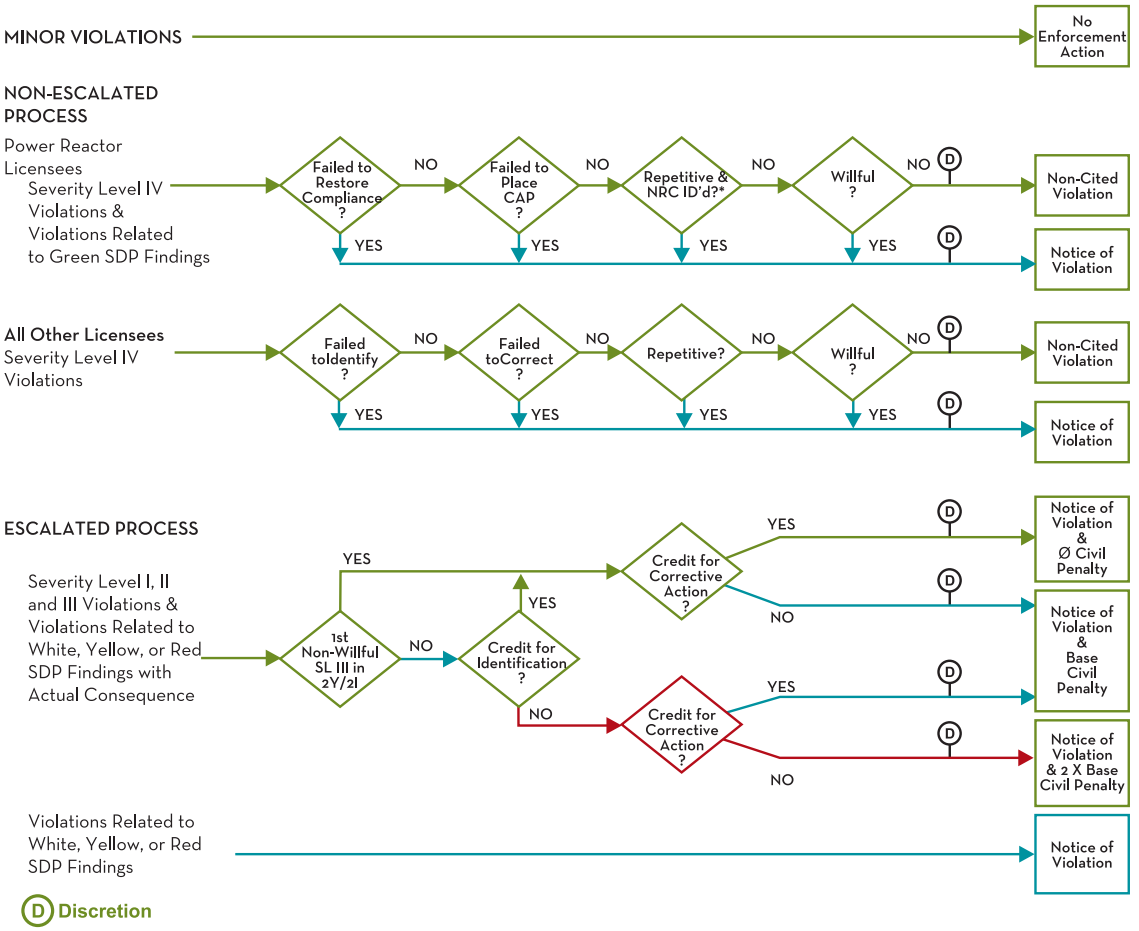
Non-Cited Violations (NCVs). Severity Level IV violations and violations associated with Green SDP findings make up the majority of the non-minor violations. Provided certain criteria in Section VI.A of the Enforcement Policy are met, the NRC will normally disposition these Severity Level IV violations and violations associated with Green SDP findings as Non-Cited Violations ("NCVs"). NCVs are documented in inspection reports to establish public records of the violations, but are not cited in NOVs, which normally require written responses from licensees.

Civil Penalties

Severity Level I, II, and III traditional violations are considered for civil penalties. The NRC imposes different levels of civil penalties based on a combination of the type of licensed activity, the type of licensee, the severity level of the violation, and (1) whether the licensee has had any previous escalated enforcement action (regardless of the activity area) during the past two years or past two inspections, whichever is longer; (2) whether the licensee should be given credit for actions related to identification; (3) whether the licensee's corrective actions are prompt and comprehensive; and (4) whether, in view of all the circumstances, the matter in question requires the exercise of discretion. Additional guidance on the exercise of enforcement discretion can be found in the Enforcement Policy.

The following chart represents the NRC's graded approach for dispositioning violations and is commonly referred to as the "METRO map."

NRC CIVIL PENALTY PROCESS



Alternate Dispute Resolution ADR is a less formal method (compared to litigation) of resolving disputes between two or more parties. Numerous forms of ADR exist, with mediation and arbitration being the most widely recognized. The NRC pilot program uses mediation, which involves a neutral third party with no decision-making authority who seeks to assist the parties voluntary resolution of issues in controversy. The NRC's pilot ADR program consists of two components:

Early-ADR – offered to an individual prior to an NRC investigation who has alleged discrimination related to his/her involvement in protected activity; and

Post-Investigation ADR – offered in cases of both substantiated discrimination and other wrongdoing after an investigation by the NRC Office of Investigations ("OI") where enforcement action is contemplated.

Experience to date suggests that ADR can be a timely and efficient method of resolving disputes between parties.

SDP Findings

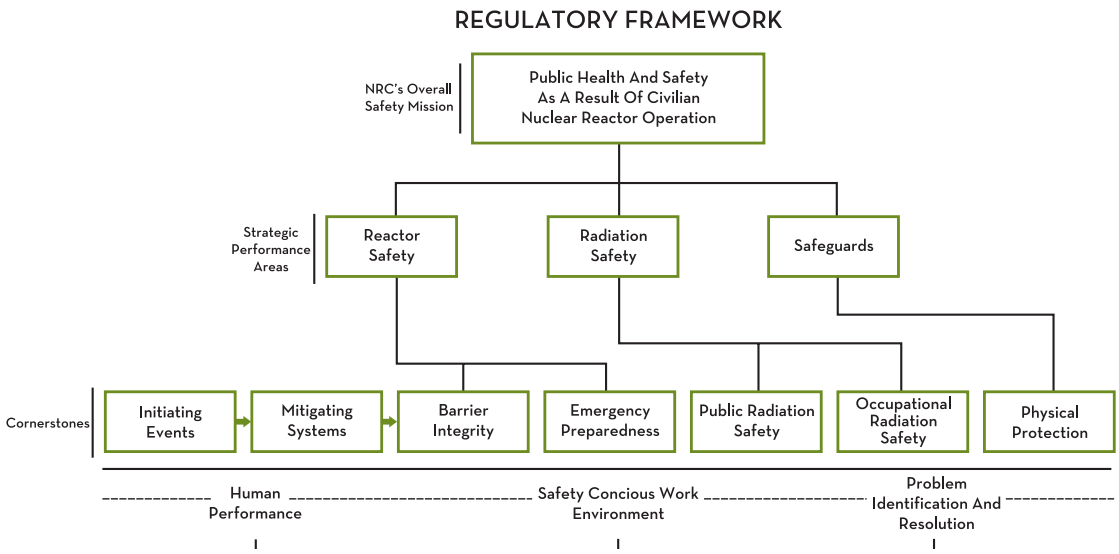
Violations related to White, Yellow, or Red SDP findings are also addressed within the escalated enforcement process and are cited in NOVs. Severity levels are not normally assigned and civil penalties are not normally imposed for these violations.

Orders

The NRC may also issue orders to modify, suspend, or revoke a license; to cease and desist from a given practice or activity; or take such other action as may be proper. Orders may be issued in lieu of, or in addition to civil penalties.

Reactor Oversight Process

Reactor oversight focuses on three key strategic *performance areas:* reactor safety, radiation safety, and safeguards. Within each strategic performance area are *cornerstones* that reflect the essential safety aspects of facility operation. These seven cornerstones include: initiating events, mitigating systems, barrier integrity, emergency preparedness, public radiation safety, occupational radiation safety, and physical protection. Satisfactory licensee performance in the cornerstones provides reasonable assurance of safe facility operation and that the NRC's safety mission is being accomplished. Each cornerstone contains inspection procedures and performance indicators to ensure that their objectives are being met.



The NRC evaluates plant performance by examining *inspection findings* reported by NRC inspectors and *performance indicators* ("PIs") reported by the licensee. Both PIs and inspection findings are evaluated and given a color designation based on their safety significance. Green inspection findings or PIs indicate a very low risk significance and therefore have little or no impact on safety. White, Yellow, or Red inspection findings or PIs represent a greater degree of safety significance, respectively.

NRC Inspection Findings for each plant are documented in inspection reports and summarized in Plant Issues Matrices ("PIMs"). Inspection findings are evaluated using the SDP in accordance with Inspection Manual Chapter 0609, "Significance Determination Process." Performance Indicators are reported to the NRC by licensees on a quarterly basis in accordance with the latest PI reporting guidance in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline."

Operability Determinations. Regulatory Issue Summary 2005-020 highlights an issue that continues to expose licensees to potential enforcement action. The inspection manual section attached to RIS 2005-020 provides guidance to NRC inspectors for reviewing the actions of licensees pertaining to the operability of structures, systems, and components ("SSCs") following the discovery of degraded and nonconforming conditions in SSCs. The NRC revised its inspection guidance to reflect ongoing regulatory changes, including implementation of the revised reactor oversight process, the requirement that licensees appropriately assess and manage risk related to proposed maintenance activities, and implementation of the revised change control process in 10 C.F.R. § 50.59. Licensees may also use the inspection information to guide their own operability determinations.

The NRC assesses plant performance continuously. The NRC determines its regulatory response in accordance with an Action Matrix that provides for a range of actions commensurate with the significance of the PI and inspection results. For a plant that has all of its PIs and inspection findings characterized as green, the NRC will only implement its "baseline inspection program." For plants that do not have all green PIs and inspection findings, the NRC will perform additional inspections and initiate other actions commensurate with the safety significance of the issues. The NRC also recognizes that there may be rare instances in which the regulatory actions dictated by the Action Matrix may not be appropriate. In these instances, the NRC may deviate from the Action Matrix to either increase or decrease Agency action upon approval by the Executive Director for Operations.

NRC INVESTIGATIONS: OFFICE OF INVESTIGATIONS

The OI Mandate

The NRC conducts investigations of potential violations that may involve *misconduct* through the Office of Investigations ("OI"), an independent office within the NRC. OI's investigations typically involve possible violations of 10 C.F.R. § 50.5 (deliberate misconduct), 10 C.F.R. § 50.7 (employee protection/discrimination), and 10 C.F.R. § 50.9 (complete and accurate information). If misconduct is substantiated, these matters could lead to criminal and/or civil sanctions to the licensee, to individuals, or both. OI investigations are serious matters that involve procedures that are different from routine NRC compliance inspections.

All **"willful"** violations of NRC regulations are subject to criminal prosecution and liability under the Atomic Energy Act. Both the individual and the company may be found in criminal violation. Under basic principles of corporate criminal liability, a corporation may be held criminally liable for any criminal act carried out by its agents if that act occurs within the scope of its agent's employment.

While routine NRC inspections are usually focused on whether a violation occurred in a strict compliance sense, OI investigations involve misconduct. This introduces the additional consideration of whether the violation was the result of *willfulness.* "Willfulness" as generally interpreted includes two subsets: (1) "deliberate misconduct" and (2) "careless (or reckless) disregard." *Deliberate misconduct* involves knowing intent — an individual knew that an action would be in violation of a procedure or regulation, and took the action anyway. *Willful misconduct* also includes actions taken in *"careless disregard"* of regulations. This involves something more than negligence or mistake — while an individual may not have known the requirements, he may be charged with willfulness if he blatantly failed to consider compliance or to otherwise exercise good faith.

An individual who engages in deliberate misconduct is subject to individual sanctions from the NRC under the deliberate misconduct rule, 10 C.F.R. § 50.5. An individual who exhibit careless disregard will not be subjected to individual enforcement action, unless they are a licensee (i.e., a licensed operator). However, the individual's culpability in this case may still be prominent in the civil enforcement process and may be considered in any criminal prosecution.

For example, in connection with the complete and accurate information rule (10 C.F.R. § 50.9), a routine NRC violation may exist regardless of whether individuals knew that the information submitted (or maintained in a record) was incomplete or incorrect. But OI cannot conclude that there is wrongdoing by the individual (and therefore a violation of 10 C.F.R. § 50.5) absent a finding of prior knowledge of the error. This would be a case of *"falsification."* Willfulness that involves careless disregard for the accuracy of the information may not result in an individual civil sanction, but would tend to increase the significance — and therefore severity level — of any NRC enforcement action to the licensee for the Section 50.9 violation.

The Investigation Process

OI investigations normally involve fact-finding interviews with employees. The interviews are conducted by trained investigators ("agents") rather than inspectors. The investigators may be accompanied by an NRC technical subject matter advisor.

Some OI investigations are coordinated through company representatives. However, an OI investigator may contact employees directly to request an interview. The request may occur during normal work hours or at home after work. A request for an interview does not necessarily mean that the NRC thinks the individual did something wrong; generally it only means that the investigator thinks that individual may have information relevant to the matters under review.

All employees are free to inform management or company counsel of an interview request.

All employees are also free to meet with NRC investigators at any convenient time or place without informing management.

OI has an absolute right to come on site, meet with employees who perform activities regulated by the NRC and examine records that the NRC requires licensees to maintain. Licensees may not obstruct an investigation. However, if OI's requests are unreasonable and burdensome, a licensee may complain and attempt to set reasonable procedures and limits. Individuals called to interviews need not respond unless OI obtains a subpoena: absent a subpoena, interviews are voluntary.

It is good policy to cooperate fully with NRC investigations and to help assure that complete and accurate information is communicated to the agency. The licensee's role in an OI investigation is normally limited to making employees available for interviews, controlling the impact on normal operations, and providing requested documents. It is also generally appropriate, and often advisable, for the licensee to conduct its own prompt, internal investigation into matters of potential wrongdoing that come to its attention.

Guidelines for OI Interviews

There are several guidelines that apply to individuals that would be interviewed by OI, and it is acceptable to inform employees of these guidelines:

1. You are free to talk to the NRC privately, at work or at some other mutually acceptable location. Also, you are free to meet with the NRC with or without informing management of the request.

2. If you are contacted, you have the right to decline the request. Absent a subpoena compelling an interview, all interviews are voluntary on the part of the employee. Similarly, while the company encourages cooperation, you are certainly entitled to schedule an interview at a time and place that is convenient for you. An honest desire to cooperate does not compel immediate acquiescence to the investigator's schedule.

3. You have the right to have an attorney present with you at the interview. Also, you have the right (but not an obligation) to consult with an attorney prior to the interview, including company counsel. Company counsel can discuss with you the issue of representation at the interview, as well as other background and guidelines for the interview.

4. OI interviews are usually tape recorded. Under NRC policy OI will not allow employees to tape record the interview themselves. OI will offer an opportunity to review a transcript, but will not provide a copy to the interviewee or licensee, at least until the investigation is complete.

5. If you agree to an interview, the following specific guidance applies:

   You must tell the truth to the best of your knowledge and belief. A knowing false statement to an OI agent may constitute a crime.

   If you do not know an answer, say so. Do not guess or speculate. If an answer is available by checking a document or other source, offer to get back later or simply refer to the source.

   Take your time and give complete answers. Be sure you hear and understand a question before answering. Listen to the entire question. Answer compound questions one question at a time. There is nothing inappropriate with asking an investigator to restate or explain a question.

   Review any documents that are discussed carefully before answering questions about the documents. Often, the words of the document can speak for themselves without interpretation. Also, check the details such as the date, the draft, the distribution list.

   Remain calm, even under difficult questioning. Emotions can cloud clear thinking.

   Don't be an advocate. You are not being interviewed to defend a position — only to relate facts. Do not be argumentative or defensive.

SAFETY CULTURE: PROMOTING, REPORTING, AND INVESTIGATING

Safety-First: Promoting Safety Culture at Nuclear Power Plants

The NRC believes that the working environment at power plants has a direct relationship with plant safety. Therefore, licensees have an obligation to foster the development of *safety culture* at their facilities. The NRC defines safety culture as "that assembly of characteristics and attitudes in organizations and individuals which establishes that, as an overriding priority, nuclear safety issues receive the attention warranted by their significance."

In order to promote safety culture, the NRC expects all licensees and contractors to establish and maintain a *safety conscious work environment* ("SCWE"). In a SCWE, employees are encouraged to raise safety concerns and these concerns are promptly reviewed, given the proper priority based on their potential safety significance, and appropriately resolved with timely feedback to the individual with the concern as well as other employees. While the NRC does not have a regulation requiring licensees to maintain a SCWE, the NRC has clearly stated its expectation that employees feel free to raise nuclear safety issues and the agency has been updating its guidance documents accordingly. In 2006, for example, the agency made changes to the agency's Reactor Oversight Process to reflect the important role safety culture plays in plant operations. The NRC has issued several documents to aid licensees in establishing SCWEs, including the attached: NRC Regulatory Issue Summary 2005-18: Guidance for Establishing and Maintaining a Safety Conscious Work Environment (Aug. 2005)

Protected Activities and Retaliation

The NRC places a high value on an employee's freedom to raise potential safety concerns both to licensee management and to the NRC without fear of reprisal or actual harassment and intimidation. Section 211 of the Energy Reorganization Act, as amended and 10 C.F.R. §§ 19.20, 30.7, 40.7, 50.7, 60.9, 61.9, 70.7, 72.10, and 76.7 provide that no employer may discharge or otherwise discriminate against any employee with respect to compensation, terms, conditions, or privileges of employment because the employee engaged in certain protected activities. Licensees and contractors are responsible for ensuring that they do not discriminate against their

EXAMPLES OF PROTECTED ACTIVITIES	EXAMPLES OF ADVERSE ACTIONS
Raising an issue with a supervisor	Discharge
Initiating a work item	Transfer/reassignment
Disagreeing with an issue resolution	Reduced pay or reduced bonus
Cooperating in an investigation	Negative performance appraisal
Raising a safety issue outside "chain of command"	Blacklisting or Non-selection
"Going to the NRC"	Threat
Filing a DOL case	Harassment or hostile work environment

employees for engaging in such protected activities. Licensees and contractors that discriminate against their employees who engage in protected activities are subject to sanctions by the NRC, that include notices of violation and civil penalties.

In addition, under the Deliberate Misconduct Rule, set forth in 10 C.F.R. §§ 30.10 and 50.5, licensee and contractor employees are subject to sanctions by the NRC for discrimination against other employees who engage in protected activities. These sanctions include orders barring individuals from NRC licensed activities. Significant NRC enforcement actions are published in NUREG-0940 and can be accessed through the NRC Office of Enforcement's home page.

If an employee feels discriminated against for bringing violations or safety concerns to the NRC or an employer, the employee may file a complaint with the NRC, the Department of Labor ("DOL"), or appropriate state entities. Information on filing a complaint with the Department of Labor can be found on www.osha.gov. The DOL may investigate the complaint and may award personal relief to the employee if a finding of unlawful discrimination is made. In addition to the DOL process, the NRC may take enforcement action against the employer for unlawful discrimination.

Reporting Wrongdoing by Licensees, and their Employees and Contractors

The NRC has several checks in place to ensure that individuals feel comfortable coming forward and reporting a safety concern. The NRC's Allegations Program deals with information concerning violations of NRC requirements and wrongdoing by individuals or organizations who are:

Licensed by the NRC;
Applicants for licenses;
Licensee contractors or vendors; or
Employees of any of the above

The NRC will evaluate each allegation of harassment, intimidation, or discrimination to determine whether sufficient information exists to initiate an investigation. After this evaluation, any investigation would be conducted by the Office of Investigations ("OI"). OI may interview the individual making the allegation and review available documentation. Based on this evaluation, OI will assign a priority and a decision will be made whether to further pursue the matter through interviews and document requests.

An individual can report an allegation of wrongdoing by sending an email to Allegations@nrc.gov or by calling the NRC's toll-free safety hotline at (800) 695-7403.

Reporting Wrongdoing by NRC Employees or NRC Contractors

Issues concerning the conduct of NRC employees or NRC contractors come under the purview of the NRC's Office of Inspector General ("OIG"). OIG is responsible for detecting and preventing fraud, waste, and wrongdoing within the NRC.

Once the OIG receives an allegation of misconduct, fraud or mismanagement, it will refer to its priorities and general guidelines in determining whether to open an investigation. Some allegations result in investigations, while others are retained as the basis for audits, referred to NRC management, or, if appropriate, referred to another law enforcement agency. Upon completion of an investigation, OIG will prepare a report summarizing the facts disclosed during the investigation, and a copy is distributed to prosecuting attorneys, as appropriate, and to agency officials who may have an official interest in the results of the investigation.

An individual can report by filling out a form on the NRC's website, calling the NRC's toll-free hotline at (800)-233-3497, or mailing the information to the agency, at:

U.S. Nuclear Regulatory Commission
Office of the Inspector General
Hotline Program
Mail Stop T5-D28
11545 Rockville Pike
Rockville, MD 20852-2738

HEARING PROCESS OVERVIEW

The NRC conducts hearings on disputed matters involved in the licensing of nuclear reactors, nuclear materials, and nuclear materials facilities. Hearings are also available to contest civil penalties for infractions of NRC regulations or staff orders directing that some action be taken. The NRC regulations that govern the hearing process are in Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders (10 C.F.R. Part 2).

Background

When NRC licensing actions involve nuclear reactors, a "Notice of Opportunity for Hearing" will be published in the *Federal Register.* Hearing requests and intervention petitions must be filed within 60 days of the date of the *Federal Register* publication of the Notice of Opportunity for Hearing. To be granted a hearing on a concern regarding a domestic licensing or enforcement action, members of the public must explain the nature of their interest in the proposed NRC licensing or enforcement action and set forth the reasons and bases for their concerns in the form of proposed contentions. Generally, hearings are sought by those who reside or work near an affected nuclear facility and who believe that a proposed action raises environmental or safety questions. Participants in NRC hearings have included individuals, citizen groups, private businesses, and governmental bodies. Broadly speaking, the contested issues in NRC licensing adjudications fall into two generic categories: (1) safety/technical issues arising under the AEA; and (2) environmental issues arising under NEPA.

A three-member panel of administrative judges - an "ALSB" or "Licensing Board"- drawn from the NRC's Atomic Safety and Licensing Board Panel generally conducts these hearings. The Licensing Board is composed of one lawyer, who acts as chairperson, and two technically qualified persons. On rare occasions the Commission itself may preside at a hearing. The ASLB judges are employees of the NRC; however, under NRC rules and under the Administrative Procedure Act, they are independent from the NRC staff. The judges have no stake in the outcome of a proceeding, and reach objective decisions based on the record. The Licensing Board is charged with compiling a factual record in a proceeding, analyzing the record, and making a determination based upon the record.

The Commission entertains appeals and petitions for review of the decisions of the ASLB. A special Commission office (Office of Commission Appellate Adjudication) assists the Commission in these reviews by analyzing the cases, determining the legal options for a final decision, and drafting decisions for the Commission in accordance with the Commission's guidance. The Secretary of the Commission maintains the files for NRC's licensing and enforcement adjudications, known as the Adjudicatory Docket.

Hearing Process

NRC's regulations in 10 CFR Part 2 specify different types of hearing processes for different types of agency actions. For some cases, particularly in the enforcement arena, the NRC employs a formal, trial-type process (a Subpart G hearing) similar to the procedures used in non-jury Federal court lawsuits, including pre-trial discovery between the parties and questioning of witnesses at an evidentiary hearing. In most cases, however, the NRC follows a more informal hearing process (a Subpart L hearing). Subpart L contains the procedures applicable to informal adjudications concerning, among other things, initial license applications for nuclear power reactors, license amendments, and operator or senior operator licenses subject to 10 C.F.R. Part 55. The key components of a Subpart L proceeding are set forth below.

Standard for Admissibility of Issues. At the time an intervenor files a petition for leave to intervene and/or request for hearing, it must specify "contentions" about the licensing that are specific, adequately supported, and material to the subject matter of the proceeding.

NRC Staff Participation. In most Subpart L proceedings, the NRC Staff is not required to participate as a party, though it typically does participate. Should the NRC Staff choose not to participate, however, the Presiding Officer retains the right to order the Staff to participate with respect to a particular issue.

Hearing File. A principal difference between Subparts G and L relates to discovery. Subpart G provides for "classic" discovery, e.g., interrogatories, depositions, requests for admission. In Subpart L proceedings, the NRC Staff is directed to compile a hearing file consisting of the application for licensing action and any amendment(s) to the application; any NRC safety, environmental, or other reports relating to the application; and any relevant correspondence between the NRC and the applicant. See 10 C.F.R. § 2.1231. The Staff has a continuing duty to keep the hearing file up to date with respect to these materials.

Mandatory Disclosures. After admission of contentions the parties have an obligation to make prompt disclosure of relevant documnetary evidence. This includes documents in electronic form (e.g., email). Beyond the provision of the hearing file and mandatory disclosures, discovery is prohibited in the subpart L process.

Written Presentations and Discretion to Hold Oral Presentations. Another key difference between the informal hearing provided for in Subpart L and the formal proceeding conducted under Subpart G is the written presentation, submitted under oath or affirmation. Subpart L contemplates that written presentations and

(if necessary) follow-up written questions posed by the presiding officer, rather than an oral hearing, will be the vehicle by which the parties are heard and the issues resolved. In the event that the presiding officer finds that the written presentations are inadequate to resolve the issues raised, he has the discretion to allow or require the parties to make oral presentations.

Initial Decision. Following these presentations, on the basis of the hearing file and any information presented under oath in written or oral presentations, the presiding officer will make an initial decision.

Appeals and Judicial Review. Decisions of Licensing Boards can be appealed to the Commission, and Commission decisions can be appealed directly to the U.S. Courts of Appeals.

NEW PLANT LICENSING: THE BASICS

NRC regulates the construction and operation of new commercial nuclear power facilities. Historically, the NRC issued construction permits and operating licenses in a two-step licensing process under Part 50. In an effort to improve regulatory efficiency and add greater predictability to the process, in 1989 the NRC established alternative licensing processes in 10 C.F.R. Part 52 that included several new types of approvals. Specifically, the NRC may issue standard design certifications, early site permits ("ESPs"), and combined operating licenses ("COLs").

Design Certification. The NRC can certify a reactor design for 15 years through the rulemaking process. The NRC review of a design certification application will address the safety issues of an essentially complete nuclear power plant design, independent of a specific site. An application for a standard design certification must also contain proposed inspections, tests, analyses, and acceptance criteria ("ITAAC") for the standard design.

Early Site Permit. The NRC can issue an ESP for approval of one or more sites separate from an application for a construction permit or combined license. ESPs are valid for 10 to 20 years and can be renewed for an additional 10 to 20 years. The NRC review of an early site permit application will address site safety issues, environmental protection issues, and plans for coping with emergencies, independent of the review of a specific nuclear plant design.

Combined Operating License. A combined license authorizes construction and operation of the facility in a manner similar to a construction permit and operating license under the two-step process (Part 50). The COL application must also the inspections, tests, and analyses that the applicant must perform. An application for a combined license under 10 CFR Part 52 can incorporate by reference a design certification and/or an early site permit. The advantage of this approach is that the issues resolved during the design certification rulemaking and the early site permit hearing processes are precluded from reconsideration later at the combined license stage. If an early site permit and design certification are not referenced, then the NRC also reviews the technical and environmental information associated with the design and the site.

New Reactor Licensing Reviews

All nuclear power plant applications must undergo a safety review and an environmental review by the NRC. An applicant for a COL must submit a Safety Analysis Report, which contains the design information and criteria for the proposed reactor and comprehensive data on the proposed site. In addition, the application must contain a comprehensive assessment of the environmental impact of the proposed plant.

When an application to construct a nuclear plant is received, the NRC staff determines whether it contains sufficient information to satisfy Commission requirements for a detailed review. If the application is accepted, the NRC begins its technical review of the application and initiates the NEPA process. In addition, a notice of receipt of the application and notice of an opportunity to request a hearing is published in the *Federal Register.*

The NRC staff then reviews the application to determine whether the plant design meets all applicable regulations including:

Characteristics of the site, including surrounding population, seismology, meteorology, geology and hydrology;

Design of the nuclear plant;

Anticipated response of the plant to hypothetical accidents;

Plant operations including the applicant's technical qualifications to operate the plant;

Discharges from the plant into the environment (i.e., radiological effluents); and

Emergency plans.

When the NRC completes its review, it prepares a Safety Evaluation Report summarizing the anticipated effect of the proposed facility on public health and safety. The NRC also issues a Draft Environmental Impact Statement for comment by the appropriate Federal, State, and local agencies as well as by the public. Afterwards, the agency issues a Final Environmental Impact Statement that addresses all comments received.

The Advisory Committee on Reactor Safeguards ("ACRS"), an independent group that provides advice on reactor safety to the five-member Commission, reviews each application to construct or operate a nuclear power plant. The ACRS review begins early in the licensing process, and a series of meetings with the applicant and the NRC staff are held at appropriate times in the review process. When the ACRS has completed its review, it submits the results in a report to the Commission via a letter to the Chairman of the NRC.

The NRC may also authorize the licensee to do some construction at the site prior to the issuance of a construction permit. This authorization is known as a Limited Work Authorization ("LWA") and is done at the risk of the licensee. This authorization may be granted only after the Licensing Board has made certain of the NEPA findings required by the Commission's regulations for authorizing construction and has determined that there is

reasonable assurance that the proposed site is a suitable location, from a radiological health and safety standpoint, for a nuclear power reactor of the general size and type proposed.

New Reactor Hearings

The Atomic Energy Act requires that intrested persons be given an opportunity to request a hearing on a COL application. Petitioners with standing and an admissible issue become "intervenors" in a contested adjudicatory process that must be completed before a COL is issued for a nuclear power plant. In addition, at a mandatory or "uncontested" hearing (which is in addition to any hearing on "contested" issues raised by intervenors following the notice of opportunity to request a hearing), the Licensing Board or the Commission reviews the adequacy or sufficiency of the NRC Staff's review of the application.

After issuing a combined license, the Commission authorizes operation of the facility only after verifying that the licensee completed required inspections, tests, and analyses and that acceptance criteria were met. At periodic intervals during construction, the NRC publishes notices of these completions in the *Federal Register.* Then, not less than 180 days before the date scheduled for initial loading of fuel, the NRC will publish a notice of intended operation of the facility in the *Federal Register.* There is another opportunity for a hearing at this time, but the NRC will consider petitions for a hearing only if the petitioner demonstrates that the licensee has not met or will not meet the acceptance criteria. Before a plant can operate, the Commission must determine that the acceptance criteria have been met.

Key Documents:

NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants."

Regulatory Guide 1.206, "Combined License Applications for Nuclear Power Plants."

NUREG-1555, "Standard Review Plan for Environmental Reviews for Nuclear Power Plants."

Regulatory Guide 4.2, "Preparation of Environmental Reports for Nuclear Power Stations."

DECOMMISSIONING FUNDING ASSURANCE

NRC's nuclear regulatory activities include the decommissioning of nuclear facilities, which means "to remove a facility or site safely from service and reduce residual radioactivity to a level that permits (1) release of the property for unrestricted use and termination of the license; or (2) release of the property under restricted conditions and termination of the license." NRC regulates the decontamination and decommissioning of nuclear facilities with the ultimate goal of license termination.

THERE ARE THREE PRIMARY METHODS OF DECOMMISSIONING NUCLEAR REACTORS

DECON is the method in which the equipment, structures, and portions of a facility and site containing radioactive contaminants are removed or decontaminated to a level that permits the property to be released for use in accordance with the NRC's definition of decommissioning, shortly after cessation of operations.

SAFSTOR is the method in which the nuclear facility is placed and maintained in a condition that allows the nuclear facility to be safely stored and subsequently decontaminated (deferred decontamination) to levels that permit release for use in accordance with the NRC's definition of decommissioning.

ENTOMB is the method in which radioactive contaminants are encased in a structurally long-lived material, such as concrete. The entombed structure is appropriately maintained, and continued surveillance is carried out until the radioactivity decays to a level permitting release of the property in accordance with the NRC's definition of decommissioning.

NRC regulations specify the requirements for certain licensees, including operating power reactor licensees, to provide financial assurance for decommissioning. The general requirements for applications for license termination and decommissioning nuclear power, research, and test reactors are contained in 10 C.F.R. Part 50, "Domestic Licensing of Production and Utilization Facilities." Specifically, 10 C.F.R. § 50.75 establishes requirements for indicating how this assurance will be provided, namely the amount of funds that must

be provided, including updates, the methods to be used for assuring funds, and provisions contained in trust agreements for safeguarding decommissioning funds.

Decommissioning Cost Estimates

Estimating the minimum amount of funds needed for decommissioning is important to prevent funding shortfalls that could adversely affect public health and safety. The certification or "formula" amounts in 10 CFR § 50.75(c)(1) act as threshold review levels. While not necessarily representing the actual cost of decommissioning for specific reactors, these certification amounts provide assurance that licensees are able to demonstrate adequate financial responsibility in that the bulk of the funds necessary for a safe decommissioning are being considered and planned for early in facility life, thus providing adequate assurance that the facility will not become a risk to public health and safety when it is decommissioned.

Requirements for establishing the minimum funding amounts for decommissioning are set out in 10 C.F.R. §§ 50.33(k), 50.75, 50.82(a)(4), 50.82(a)(8), and 50.82(a)(9). These requirements include:

An initial certification amount (using either formula amounts or site-specific decommissioning cost estimate).

Adjustments to the certification amount (or site-specific estimate) over the operating life and storage period, if any, of the facility. Specifically, 10 CFR § 50.75(b) requires each licensee to annually adjust the initial certification amount by use of the equation in 10 CFR § 50.75(c)(2), which provides for escalation factors for labor, energy, and waste burial.

A post-shutdown decommissioning activities report ("PSDAR") to be submitted by the licensee to the NRC prior to or within two years following permanent cessation of operations.

A site-specific decommissioning cost estimate must be submitted to the NRC prior to the licensee using any funds other than those described in 10 CFR § 50.82(a)(8)(ii). Also, such a cost estimate is required to be submitted within two years following permanent cessation of operations, if not already submitted.

A licensee is required by 10 CFR § 50.82(a)(9)(ii)(F) to provide an "updated site-specific estimate of remaining decommissioning costs" as part of a license termination plan ("LTP"). The licensee must submit its LTP at least two years before the date of termination of the license.

Financial Assurance Methods

A certification of financial assurance is a statement by the licensee that a prescribed amount of funding has been obtained for decommissioning. The objective of NRC's financial assurance requirements is to ensure that a suitable mechanism for financing the decommissioning of licensed facilities is in place in the event that a licensee is unable or unwilling to complete

decommissioning. Financial assurance is achieved through the use of financial instruments. Some financial instruments provide a special account into which the licensee may essentially prepay the applicable costs. Other financial instruments guarantee funding by a suitably qualified third party, thereby providing "defense in depth" in the event the licensee is unable or unwilling to pay these costs when they arise. Financial assurance for decommissioning must be obtained prior to the commencement of licensed activities or receipt of licensed material, and it must be maintained until termination of the license.

According to 10 CFR § 50.75(e)(1), Licensees may demonstrate financial assurance for decommissioning by one of the following methods:

Prepayment. The deposit preceding the start of operation, or the transfer of a license pursuant to 10 CFR § 50.80, into an account segregated from licensee assets and outside the administrative control of the licensee and its subsidiaries or affiliates of cash or liquid assets such that the amount of funds would be sufficient to pay decommissioning costs at the time permanent termination of operations is expected. Prepayment may be in the form of a trust, escrow account, government fund, certificate of deposit, deposit of government securities, or other payment acceptable to the NRC.

External Sinking Fund. A fund established and maintained by setting funds aside periodically in an account segregated from licensee assets and outside the administrative control of the licensee and its subsidiaries or affiliates in which the total amount of funds would be sufficient to pay decommissioning costs at the time permanent termination of operations is expected. An external sinking fund may be in the form of a trust, escrow account, government fund, certificate of deposit, deposit of government securities, or other payment acceptable to the NRC.

Guarantee Method. Can be in the form of surety bonds, letters of credit, or insurance; parent company guarantees may be used when a financial test specified in Appendix A to 10 C.F.R. Part 30 is used.

Statement of Intent. A Statement of Intent by a government agency, if applicable, indicates that funds for decommissioning will be obtained when necessary.

Contractual Obligations. Obligations on the part of a licensee's customers, the total amount of which over the duration of the contracts will provide the licensee's total share of uncollected funds to be needed for decommissioning pursuant to 10 C.F.R. §§ 50.75(c), 50.75(f), or 50.82.

Other Mechanisms. Refers to any other mechanism, or combination of mechanisms, that provides assurance of decommissioning funding equivalent to that provided by the mechanisms listed above.

The total cost of decommissioning a reactor facility depends on many factors, including the timing and sequence of the various stages of the program, type of reactor or facility, location of the facility, radioactive waste burial costs, and plans for spent fuel storage. The NRC estimates costs for decommissioning a nuclear power plant range from $280-$612 million. NRC requires

nuclear power plant licensees to report to the agency the status of their decommissioning funds at least once every two years, annually within five years of the planned shutdown, and annually once the plant ceases operation.

Key Documents:

NUREG-1577, "Standard Review Plan on Power Reactor Licensee Financial Qualifications and Decommissioning Funding Assurance."

NUREG-1700, "Standard Review Plan for Evaluating Nuclear Power Reactor License Termination Plans."

NUREG-1307, "Report on Waste Burial Charges."

NUREG-1757, "Consolidated NMSS Decommissioning Guidance, Financial Assurance, Recordkeeping, and Timeliness."

Regulatory Guide 1.159, "Assuring The Availability Of Funds For Decommissioning Nuclear Reactors"

REPORTING REQUIREMENTS

The NRC's regulations list reporting requirements for notifying the NRC of emergency and non-emergency events involving NRC-licensed radioactive materials, commercial nuclear facilities, or materials licensed under the Agreement States program. Many of the important reporting requirements are set forth in 10 C.F.R. Part 20, 21 and 50. Below, is a list of some of those reporting obligations and corresponding guidance documents, along with a list of the event triggering the requirement, the timeframe for making a report, and how and where a report should be made.

Domestic Licensing of Production and Utilization Facilities 10 C.F.R. Part 50

Regulation

10 C.F.R. § 50.72, "Immediate notification requirements for operating nuclear power reactors"

10 C.F.R. § 50.73, "Licensee event reporting system"

Guidance Document

Event Reporting Guidelines 10 C.F.R. §§ 50.72 and 50.73 (NUREG-1022, Rev. 2)

TYPE OF REPORT	SOURCE OF REQUIREMENT	TIMING	REPORTING METHOD	PRIMARY RECIPIENT
Declaration of an Emergency Class	§ 50.72(a)(1)(i)	Within 1 hour of occurrence	Emergency Notification System (301-816-5100)/ Phone; Fax	NRC Operations Center
Activation of Emergency Response Data System	§ 50.72(a)(4)	Within 1 hour after declaring an emergency class equal to, or more serious than, an Alert	Electronic data link (See Part 50, Appendix E)	(See Part 50, Appendix E)
Notification of certain non-emergency events, conditions and releases described in § 50.72(b)	§ 50.72(b)(1), (2), and (3)	Within 1 hour, 4 hours, or 8 hours of occurrence (see regulation)	Emergency Notification System (301-816-5100)/ Phone; Fax	NRC Operations Center
Follow-up notification of certain events, conditions and releases to indicate worsening (or changing) plant conditions or termination of the event	§ 50.72(c)	Immediately	Emergency Notification System (301-816-5100)/ Phone; Fax	NRC Operations Center
Licensee Event Report (LER)	§ 50.73	Within 60 days after discovery of reportable event	Written report (Form NRC-366)	Document Control Desk, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001
Supplemental information about an LER	§ 50.73(c)	As requested by NRC	Written report	Document Control Desk, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001

Standards for Protection Against Radiation
10 C.F.R. Part 20

Regulation

10 C.F.R. § 20.1906, "Procedures for receiving and opening packages"

10 C.F.R. § 20.2201, "Reports of theft of loss of licensed material"

10 C.F.R. § 20.2202, "Notifications of incidents"

10 C.F.R. § 20.2203, "Reports of exposures, radiation levels and concentrations of radioactive material exceeding the constraints of limits"

Guidance Document

Consolidated Guidance: 10 CFR Part 20 — Standards for Protection Against Radiation (NUREG1736)

TYPE OF REPORT	SOURCE OF REQUIREMENT	TIMING	REPORTING METHOD	PRIMARY RECIPIENT
Removable radioactive surface contamination exceeds limits of § 71.87; or external radiation levels exceed limits of § 71.47	§ 20.1906(d)	Immediately	Phone	NRC Operations Center
Theft or loss of licensed material	§ 20.2201(a)(1)	Immediately	Emergency Notification System (301/816-5100)/ Phone	NRC Operations Center
Follow-up written report on lost, stolen, or missing licensed material	§ 20.2201(b)	Within 30 days after making telephone report	Written report	Document Control Desk, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; Regional office (see § 20.2201(b))
Additional information on lost, stolen, or missing licensed materialplant conditions or termination of the event	§ 20.2201(d)	Within 30 days after learning of additional information	Written report	Document Control Desk, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001
Notification of incident involving exposure to or release of by-product, source, or SNM	§ 20.2202(a)	Immediately	Emergency Notification System (301/816-5100)/ Phone	NRC Operations Center
Notification of incident involving exposure to or release of licensed material	§ 20.2202(b)	Within 24 hours of discovery	Emergency Notification System (301/816-5100)/ Phone	NRC Operations Center
Overexposure of individual, excessive levels or concentrations of radioactivity, and/or any incident requiring notification under § 20.2202 (see § 19.13(d))	§ 20.2203(a)	Within 30 days of learning of occurrence	Written report (Form NRC 366)	See regulation
Levels of radiation or radioactive material exceeding license limits within the restricted area – **or** – 10 times the unrestricted area release limits	§ 20.2203(a)(3)	Within 30 days of learning of occurrence	Written report (Form NRC 366)	See regulation
Levels or releases of radioactivity in excess of 40 C.F.R. Part 190 limits or in excess of license conditions related to 40 C.F.R. Part 190	§ 20.2203(a)(4)	Within 30 days	Written report (Form NRC 366)	Document Control Desk, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001

Reporting of Defects and Noncompliance
10 C.F.R. Part 21

Regulation

10 C.F.R. § 21.21, "Notification of failure to comply or existence of a defect and its evaluation"

TYPE OF REPORT	SOURCE OF REQUIREMENT	TIMING	REPORTING METHOD	PRIMARY RECIPIENT
Evaluation of an identified deviation or failure to comply with Atomic Energy Act ("AEA") potentially associated with a substantial safety hazard, or interim report indicating that the evaluation cannot be completed within 60 days from date of discovery	§ 21.21(a)(1) and (2)	Within 60 days from discovery of the deviation or failure to comply	Written report	Document Control Desk, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001
Notification of information reasonably indicating a failure to comply with the AEA or a defect affecting construction or operation of a facility or a basic component for facility	§ 21.21(d)(1) and (2)	Within 2 days of receipt of information identifying defect or failure to comply (see § 21.21(d)(3)(i))	Fax; Phone	NRC Operations Center
Notification of information reasonably indicating a failure to comply with the AEA or a defect affecting construction or operation of a facility or a basic component for facility	§ 21.21(d)(1) and (2)	Within 30 days following receipt of information (see § 21.21(d)(3)(ii))	Written Report	Document Control Desk, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001
Additional information concerning a defect or failure to comply	§ 21.21(e)	As requested by NRC	Not specified	Document Control Desk, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001

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