

POLICY ISSUE
NOTATION VOTE

SECY-00-0092

April 20, 2000

FOR: The Commissioners
FROM: William D. Travers
Executive Director for Operations
SUBJECT: COMBINED LICENSE REVIEW PROCESS

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PURPOSE:

To request the Commission's approval of the staff's recommendations on a number of issues related to the combined license (COL) review process under 10 CFR Part 52, Subpart C, in response to COMSECYs 95-028 and 98-004, dated September 14, 1995, and April 10, 1998.

BACKGROUND:

Since the issuance of [10 CFR Part 52](#) in 1989, the NRC staff has issued numerous SECY papers on issues associated with the implementation of Part 52 and held many meetings with the Commission and nuclear industry representatives on these issues. The major focus of the previous papers and meetings was on the implementation of Subpart B of 10 CFR Part 52, "Standard Design Certifications." This paper discusses some of the same issues, but the focus is on implementation of Subpart C of 10 CFR Part 52, "Combined Licenses." Subpart C sets forth a process for issuing COLs for nuclear power facilities. A COL is a license authorizing construction and conditional operation of a nuclear power facility, and it includes inspections, tests, analyses, and acceptance criteria (ITAAC).

The NRC staff sent an earlier version of this paper to the Commission on April 1, 1993 (a copy was placed in the NRC's public document room) and briefed the Advisory Committee on Reactor Safeguards (ACRS) in May 1993. After receiving comments from the industry and the ACRS, the staff made substantial changes to a subsequent version of the paper dated July 31, 1995. The most significant of these changes were removing a proposed license condition regarding detailed design drawings, removing any mention of hold points in the construction inspection process, and revising the format of the generic COL. A notice of a 120-day comment period on an updated version of this paper, dated May 1, 1998, was published in the Federal Register (63 FR 25528, dated May 8, 1998). The updated paper contained a change to the expiration date for the COL ([attachment 2](#), p. 4), under advice from the General Counsel.

DISCUSSION:

This paper (1) responds to a portion of Direction-Setting Issue #10, "Reactor Licensing for Future Applicants" (COMSECY-96-059, dated March 18, 1997); (2) presents recommendations on issues related to a COL; and (3) responds to comments submitted by the Nuclear Energy Institute (NEI) on the 1998 version of [Attachment 1](#) (see background discussion). NEI submitted the only comments on this paper, in a letter dated September 8, 1998, and met with the NRC staff to discuss these COL issues on October 21, 1998.

Although an application for a COL is not expected in the near future, many of the policy issues discussed in [Attachment 1](#) of this paper will affect the COL review process. NEI encouraged the NRC to continue discussions on licensing issues and stated that "the viability of the nuclear option in the U.S. depends on the stability and predictability of the COL review processes." The NRC staff intends to continue its interactions with NEI on other COL issues (i.e., issues listed in Section 5 of NEI's comments), as resources permit.

RECOMMENDATIONS:

Based on the discussions in [Attachment 1](#), the staff recommends that the Commission:

1. Approve the proposed ITAAC verification program (attachment 1, pp. 3-4).
2. Approve the treatment of QA deficiencies related to ITAAC verification (attachment 1, p. 6).
3. Approve the form and content of the generic COL (attachment 1, p. 6 and attachment 2).

Note that the staff:

1. will request COL applicants to provide construction information (attachment 1, p. 1).
2. will develop a rule for plant-specific probabilistic risk assessments (attachment 1, p. 2).
3. will develop a rule for certifying that ITAAC have been met (attachment 1, p. 4).

RESOURCES:

The resources for this paper and the Part 52 rulemaking are in the NRR budget.

COORDINATION:

The Office of the General Counsel has no legal objection to this paper. The Office of the Chief Information Officer has reviewed this paper for information technology and information management implications and has no objections. The Office of the Chief Financial Officer has reviewed this paper for resource implications and has no objections.

*/RA Approved by Frank J. Miraglia
Acting for/*

William D. Travers
Executive Director for Operations

CONTACT: Jerry N. Wilson, NRR,
415-3145

Attachments: 1. [Combined License Issues](#)
2. [Generic Combined License](#)

ATTACHMENT 1

COMBINED LICENSE ISSUES

- [Contents of an Application](#)
- [COL ITAAC](#)
- [Verification of ITAAC](#)
- [Role of the Quality Assurance Program](#)
- [COL Form and Content](#)

Contents of an Application

Subpart C of 10 CFR Part 52 delineates the requirements and procedures applicable to the issuance of a combined license (COL) for nuclear power facilities. An application for a COL may, but is not required to, reference a design certification rule (DCR) or an early site permit (ESP), or both. As discussed in Section 52.79, the contents of a COL application depend on whether the applicant references a DCR or an ESP. This paper analyzes the case in which an applicant references a DCR. If an ESP is not referenced in a COL application, all siting issues (including environmental protection, site safety, and emergency planning) must be addressed in the COL application.

A COL applicant will be responsible for submitting all of the information that would be required for an operating license under Part 50, plus the additional information required for issuance of a COL under Subpart C of Part 52, as discussed below. Sections 52.77 and 52.79 require COL applicants to submit relevant information required of applicants for construction permits (CPs) and operating licenses (OLs). Because the COL combines both a CP and an OL, the staff will need, as part of the COL application, all of the information required to make the findings under 10 CFR 50.40, 50.42, 50.43, 50.47, 50.50, 50.57, including those findings concerning the financial and technical qualifications of the applicant, and 10 CFR Part 51. A COL applicant that references a DCR must submit a final safety analysis report (FSAR) that includes a plant-specific design control document (DCD). The plant-specific DCD consists of the generic DCD, as modified and supplemented by plant-specific departures and exemptions. The FSAR also (1) includes the required siting information; (2) demonstrates compliance with site parameters and interface requirements; (3) includes site-specific design information and inspections, tests, analyses, and acceptance criteria (ITAAC); (4) provides any outstanding information regarding emergency plans; (5) includes plant-specific technical specifications; (6) addresses the COL action items; and (7) physically includes the proprietary and safeguards information.

The licensee bears the responsibility for developing and performing ITAAC. The NRC will verify through its inspection program that the licensee has performed ITAAC in an acceptable manner, thereby ensuring there is reasonable assurance that the facility has been built and will operate in accordance with the license and applicable regulations. As discussed further in this paper and in SECY-94-294, "Construction Inspection and ITAAC Verification," close coordination will be required between the licensee and the NRC staff during the construction process to ensure that essential inspections, tests, and analyses are verified in a timely manner. To facilitate this coordination, the staff will need a detailed construction plan, including construction sequence and schedule, along with, or shortly after, the COL application. The staff believes that applicants will be willing to provide this information, especially if, as nuclear industry representatives have suggested, they want to pursue an aggressive

construction schedule. Although this information is not required to be submitted, the consequences of not providing it could include diminished coordination between the licensee and the NRC, which could result in difficulty in scheduling inspections. Therefore, the NRC staff will request COL applicants to provide detailed construction plans (note #1).

A COL applicant should also submit a plant-specific probabilistic risk assessment. The staff has discussed its views on this subject in SECY-94-182, "Probabilistic Risk Assessment (PRA) Beyond Design Certification," dated July 11, 1994 (see staff requirements memorandum on SECY-94-182, dated July 27, 1994). In comment 2.a, NEI stated that "In general, the design certification PRA will be conservative with respect to an individual plant that references the design certification. A plant-specific PRA will not, in most cases, be necessary." NEI requested that a COL applicant be allowed to "demonstrate that the PRA for the design certification is bounding for the applicant's plant" and claims that this is consistent with SECY-94-182 (page 3). The NRC staff disagrees because SECY-94-182 states that "the applicant should be required to (1) update the design certification PRA or (2) complement it with any supplemental PRA analyses, as needed." SECY-94-182 does not contradict the need for a plant-specific PRA, rather it states that a plant-specific PRA should be performed by updating and/or supplementing the design certification PRA to reflect the site-specific design and the as-built plant. This specification includes areas in which design acceptance criteria were provided in lieu of detailed design information, for example, the control room. It is important to integrate the PRA into the entire detailed design of the plant and the construction process. The updated or supplemental PRA models should be consistent with design certification PRA insights and assumptions and should be adequate to support post-certification activities. In this context, any conservative or bounding assumptions made in the PRA should not mask important insights needed to support operation and performance-based regulations. Furthermore, NEI previously agreed to support a generic rulemaking that will require a COL applicant to submit a living, plant-specific PRA that updates and supersedes the design certification PRA (refer to SECY-94-182, page 2, and 62 FR 25817, 3rd column). Therefore, the NRC staff will propose a requirement for COL applicants to submit a plant-specific PRA (note #2) in the upcoming rulemaking on 10 CFR Part 52 (see SECY-98-282).

COL ITAAC

Section 52.79(c) requires that the COL application include ITAAC that are necessary and sufficient to demonstrate that the facility has been constructed and will operate in conformity with the COL, the Atomic Energy Act of 1954 (1954 Act), and the Commission's regulations. In addition, pursuant to Section 52.103(g), the Commission must find that all acceptance criteria specified in the license are met before facility operation. Because ITAAC are the sole source of acceptance criteria, it is essential that the COL ITAAC include all significant issues that require satisfactory resolution before fuel loading. The COL ITAAC consist of the ITAAC from the referenced DCR (Tier 1 information), plus the ITAAC resulting from the COL proceeding, which include the ITAAC for the site-specific design information and the regulations applicable to a COL applicant.

In Section 1 of its comments, NEI stated that the intent of Part 52 and Congress was for COL ITAAC to pertain only to hardware and design-related issues. NEI stated further that providing ITAAC on "programmatic topics" is neither required nor preferred. The NRC staff disagrees with NEI's claim. The Energy Policy Act of 1992 and Part 52 [Sections 52.79(c) and 52.97(b)(1)] clearly require that ITAAC must verify that applicable regulations have been met before a facility can be authorized to operate. These regulations make no distinction between hardware and design-related issues, versus "programmatic topics." Thus, the so-called "programmatic" ITAAC (i.e., emergency plans) are consistent with the licensing process in Part 50 [Section 50.57(a)(1)] and were included by Congress and understood by the Commission to be prerequisites for operation under a COL. In addition, the NRC has already approved so-called "programmatic" ITAAC as part of the design certification process and, therefore, are required to be successfully completed before the Commission can authorize operation. In conclusion, "programmatic" ITAAC are necessary to meet the requirements of 10 CFR Part 52 and the 1954 Act. The staff is willing to work with the nuclear industry to develop COL ITAAC that are as precise and objective as practical but will also ensure that the COL ITAAC can verify that all applicable regulations are met (see SECY-95-090).

Verification of ITAAC

The licensee documentation requirements for a facility that is licensed under Part 52 are similar to the documentation requirements under Part 50. The difference is that under Part 52, the documentation should be formatted to demonstrate the bases for successful completion of ITAAC. The licensee should certify to the NRC that ITAAC have been successfully performed and that the acceptance criteria have been met. The ITAAC certification letter should identify the specific ITAAC that have been completed; it should identify, in summary form, the bases for the conclusion that ITAAC have been met; and it should identify the location of any supporting documentation that is available for audit. The supporting documentation may include such items as test reports, engineering analyses, calculations, drawings, vendor component tests, inspections, quality assurance (QA) records, and other facility records.

The design descriptions and functional system drawings available for review during the design certification and COL application stages are sufficient to perform licensing reviews and make final safety determinations but are not adequate for actual construction or construction inspection activities. Therefore, before construction begins on any given portion of the facility, the licensee should ensure that the certified design, plus site-specific design information in the COL application, including that required by the design acceptance criteria (DAC), has been translated into detailed, plant-specific design and construction drawings. The level of detail in the certified design and the use of DAC allow for some variation in implementing the certified design. The applicant or licensee also has some flexibility in completing the final design by means of the change process in each DCR. The NRC staff will verify completion of ITAAC by the licensee and conformance with the approved design in part by using these detailed drawings. Therefore, the licensee should ensure that the drawings and other documentation reflect the final as-built configuration of the facility so that they can be used as part of the bases, where appropriate, for demonstrating conformance with the COL ITAAC.

In SECY-94-294, NRR outlined its program to develop a new construction inspection program to accommodate the requirements of future reactors licensed under Part 52 and to incorporate lessons learned from experience with the current construction inspection program (CIP). The staff completed a draft report on "The Revised Construction Inspection Program," dated October 1996, and placed it in the Public Document Room. When implemented, one of the objectives of the CIP will be to inspect the licensee's process for performing ITAAC and to inspect the licensee's program for ensuring that ITAAC are met. This inspection could include the results of the preoperational test program, QA program, and various facility construction programs. The staff expects that there will be significant interaction between the licensee and the NRC throughout the facility construction stage. Increased NRC onsite staffing, the formal designation of mandatory verification activities by the COL ITAAC, and the optional implementation of a "sign-as-you-go" (SAYGO) inspection program will create a more structured and a more interactive environment. In addition to an increased NRC onsite presence, NRR will have an active role in the construction verification activities. NRR will (1) retain program management responsibility (including the functions of interpreting DCR and COL requirements); (2) coordinate the inspection program and licensing activities; and (3) issue periodic Federal Register notices. The staff expects that the licensee will submit periodic construction status and completion reports, in order to facilitate issuance of Federal Register notices under Section 52.99 regarding the successful completion of ITAAC. A condition was included in the generic COL that requires the licensee to state, under oath or affirmation, that the COL ITAAC have been met [item 2.D(1)]. Also, the NRC staff will propose a requirement for COL applicants to certify that ITAAC have been met (note #3) in the upcoming rulemaking on 10 CFR Part 52 (see SECY-98-282).

The NRC's inspection program is written to provide general guidance to the inspection staff on a wide range of construction, preoperational, startup, and power operation areas. The inspection staff will adapt the general inspection guidance to develop a site-specific inspection plan that incorporates the specifics of the COL ITAAC and license conditions. The NRC's acceptance of ITAAC will be based upon licensee completion reports and independent NRC inspection and design review activities. The inspection program will provide for independent verification of site activities that support ITAAC. Although the results of specific NRC inspections will have a direct impact on the staff's conclusions regarding the successful completion of ITAAC, the NRC inspection program will not be limited to verification of specific ITAAC requirements. For example, the NRC inspection program might identify deficiencies in the QA program that are not related to the successful completion of ITAAC but could result in an enforcement action (see discussion on role of QA program). The NRC staff recommends that in developing the verification program, licensees also include appropriate mechanisms for controlling ITAAC activities that are not safety-related but that play a significant role in the verification of the design integrity of the as-built facility. Therefore, the staff expects that because of the special significance of ITAAC in demonstrating conformance of the as-built facility with the approved design, the licensee will implement administrative requirements or processes for the verification of ITAAC that are similar to those implemented for the conduct of the initial test program (ITP). In comment 2.b, NEI requested clarification of this statement and subsequently stated that the industry does not want a requirement for ITAAC verification to result in duplicative programs. The staff agrees that a licensee should not have to verify an ITAAC that was already verified as part of an existing program, e.g. ITP. However, the remaining ITAAC need to be verified under a program that is commensurate with the significance of ITAAC to the licensing process. The staff requests approval of the ITAAC verification program outlined above (recommendation #1). In light of the NRC staff's revised reactor oversight initiative, it may be appropriate to revisit aspects of the construction inspection and enforcement programs when future nuclear power plant applications are announced.

Role of the Quality Assurance Program

The NRC staff anticipates that there will be design, construction, and testing activities related to ITAAC verification for which the staff will not be able to rely solely on NRC inspections to verify proper completion. For these activities, the staff must rely on the licensee's QA program to provide suitable controls for effective verification. The staff must have confidence that the licensee's QA program is adequate and that it is being properly implemented so that design, construction, or testing deficiencies are identified, documented, and corrected. The QA requirements of Appendix B to Part 50 apply to all safety-related activities being conducted by the licensee during the design, construction, and operations phase, including those safety-related activities performed to satisfy ITAAC. For example, preoperational test program testing performed to demonstrate that safety-related structures, systems, and components (SSCs) will perform satisfactorily in service must be conducted under a program that satisfies Criterion XI, "Test Control," of Appendix B to Part 50 and may also satisfy testing required by the ITAAC process. The scope of the initial test program, however, is not limited to just safety-related SSCs. Specifically, Regulatory Guide (RG) 1.68, "Initial Test Programs for Water-Cooled Nuclear Power Plants," Revision 2 (August 1978), specifies the scope of plant SSCs to be tested to satisfy the requirements of Criterion 1, "Quality standards and records," of Appendix A to Part 50, and Appendix B to Part 50. Although testing is required for all SSCs within the scope of RG 1.68, it is not required that all of them be tested to the same stringent requirements. Accordingly, the administrative requirements that govern the conduct of the test program, for example, test program objectives, phases, organizational elements, personnel qualification, review, evaluation and approval of test results, test records retention, and so on, contain provisions for the application of such administrative controls in a manner commensurate with the safety significance of the SSCs within its scope. Because the ITAAC process includes safety-related activities that must be conducted under a QA program that meets the requirements of Appendix B to Part 50, licensees must develop programmatic controls and procedures that delineate how such activities will be implemented.

As discussed in public meetings with NEI representatives, there may be deficiencies identified by the QA program that are relevant to ITAAC and that must be addressed by the licensee before the NRC can find that the ITAAC have been successfully completed. NEI representatives asserted that quality assurance and quality control (QA/QC) deficiencies have no relevance to ITAAC findings. The NRC staff disagrees with any assertion that QA/QC deficiencies have no relevance to the determination of whether ITAAC have been successfully completed. Simply confirming that ITAAC had been performed in some manner and a result obtained apparently showing that the acceptance criteria had been met would not be sufficient to support a determination that ITAAC had been successfully completed. The manner in which ITAAC are performed can be relevant and

material to the results of the ITAAC. For example, in conducting ITAAC to verify a safety-related pump's flow rate, it is necessary, even if not explicitly specified in the ITAAC, that the gauge or instrument used to verify the pump flow rate be calibrated in accordance with the requirements of Appendix B to Part 50 and that the test configuration be representative of the final as-built plant conditions (i.e., valve or system lineups, gauge locations, system pressures, or temperatures). Otherwise, the acceptance criteria for pump flow rate could apparently be met while the actual flow rate in the system could be different than that required by the approved design. Therefore, the NRC staff has determined that a QA/QC deficiency may be considered in determining whether an ITAAC has been successfully completed if (1) the QA/QC deficiency is directly and materially related to one or more aspects of the relevant ITAAC (or supporting Tier 2 information) and (2) the deficiency (considered by itself, with other deficiencies, or with other information known to the NRC) leads the NRC to question whether there is a reasonable basis for concluding that the relevant aspect of the ITAAC has been successfully completed. This approach is consistent with the NRC's current methods for verifying initial test programs.

The NRC staff recognizes that there may be programmatic QA/QC deficiencies that are not relevant to one or more aspects of a given ITAAC under review and, therefore, should not be relevant to or considered in the NRC's determination as to whether that ITAAC has been successfully completed. Similarly, individual QA/QC deficiencies unrelated to an aspect of the ITAAC in question would not form the basis for an NRC determination that an ITAAC has not been met. Using the ITAAC for pump flow rate example, a specific QA deficiency in the calibration of pump gauges would not preclude an NRC determination of successful ITAAC completion if the licensee could demonstrate that the original deficiency was properly corrected (e.g., analysis, scope of effect, root cause determination, and corrective actions, as appropriate) or that the deficiency could not have materially affected the test in question. Furthermore, during the development of ITAAC, the design certification applicants determined that it was impossible (or extremely burdensome) to provide all details relevant to verifying all aspects of ITAAC (e.g., QA/QC) in Tier 1 or Tier 2. Therefore, the NRC staff accepted the applicants' proposal that top-level design information be stated in the ITAAC to ensure that it was verified, with an emphasis on verification of the design and construction details in the "as-built" facility. To argue that consideration of underlying information, which is relevant and material to determining whether ITAAC have been successfully completed, is not necessary ignores this history of ITAAC development.

In summary, the NRC staff recommends that the Commission support the conclusion that underlying information (such as QA/QC deficiencies), which is relevant and material to ITAAC, must be considered in determining whether ITAAC have been successfully completed (recommendation #2). In addition, there may also be deficiencies identified that are not relevant to ITAAC. These deficiencies may still need to be addressed by the licensee, but they will not delay a finding on successful ITAAC completion or plant operation.

COL Form and Content

Although Subpart C of 10 CFR Part 52 does not specifically discuss the form or content of a COL, Section 52.97(b)(1) requires that ITAAC be identified within the COL. The NRC staff prepared a generic COL (Attachment 2) on the basis of recently issued operating licenses and the requirements of 10 CFR Part 52. The NRC staff recommends that the form and content of the generic COL be approved (recommendation #3). In its Section 3 comments, NEI proposed several changes to the previous generic COL that are addressed below.

In comment 3.a, NEI stated that it was appropriate to include license conditions on startup and power ascension tests but commented on the wording in former condition 2.J. The staff did not adopt NEI's suggested wording, but deleted former conditions 2.H, 2.I, and 2.J and revised 2.D to provide specific license conditions for fuel loading and startup testing. In comment 3.b, NEI stated that conditions 2.A and 2.B(2) should use the term "plant-specific design control document" rather than "final safety analysis report" (FSAR). The staff disagrees because use of the term "final safety analysis report" in these conditions is correct. The plant-specific design control document is a subset of the FSAR that is required by 10 CFR 52.79. In comment 3.c, NEI stated that condition 2.G should include 10 CFR 52.97 for completeness. The staff agrees with this comment and modified condition 2.G. In comment 3.d, NEI points out that 10 CFR 52.97(b)(1) requires that ITAAC be identified within the combined license. The staff agrees and identified the COL ITAAC in license conditions 2.C and 2.D(1) and incorporated the COL ITAAC [including Tier 1 information] into the license [see item 2.D(4)].

In comments 3.e through 3.h, NEI states that there is no reason for COL holders to implement operational requirements in Title 10 that are applicable to the generic COL during the period of construction. These operational requirements include technical specifications, financial protection, emergency preparedness, and so on. The NRC staff agrees that some operational requirements are not applicable during the period of construction. However, the staff disagrees with NEI's list and believes that some operational programs will apply (e.g. security and safeguards plans). The staff has included an effectiveness statement for these operational requirements in condition 2.I. In addition, the Commission plans to consider the desirability of stating in Part 52 that the "operational requirements" become effective only after the Commission has made the finding under 10 CFR 52.103(g) in the upcoming Part 52 rulemaking.

The specified duration for the generic COL is 40 years from the date of issuance. This is a change from the 1993 version of this paper and is necessary to comply with Section 103.c of the 1954 Act, which provides that "[e]ach [commercial] license shall be issued for a specified period, as determined by the Commission, depending on the type of activity to be licensed, but not exceeding forty years[.]" Because a COL is clearly a license for the purposes of Section 103.c, the duration of a COL is limited to 40 years from the date of COL issuance. Accordingly, Section 52.83, which requires "that the initial duration of the [COL] may not exceed 40 years from the date on which the Commission makes the findings required under Section 52.99" appears to be inconsistent with the 1954 Act. However, a COL issued under Part 52, with a duration beginning on the date of issuance, would provide a term of full-power operation that is less than the 40-year duration of a full-power OL issued under Part 50. In Section 4 of its comments, NEI disagreed with the above legal analysis but has stated that the nuclear industry

would support legislation to address the duration issue. The NRC staff agrees with NEI that a legislative clarification is the best way to eliminate the uncertainty associated with the duration of a COL. The Commission has requested Congress to pass clarifying legislation on the duration of a COL.

GENERIC COMBINED LICENSE

[NAME OF NUCLEAR FACILITY]

[NAME OF NUCLEAR FACILITY OWNER]

Docket No. 52-[XXX]

License No. NPF-[XX]

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for a combined license (COL) filed by [name of nuclear facility owner(s) (the licensee)], which references Appendix ___ to 10 CFR Part 52,] complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the applicable regulations set forth in 10 CFR Chapter I, and all required notifications to other agencies or bodies have been duly made;
 - B. The applicable requirements set forth in 10 CFR 52.77, 52.78, 52.79, 52.81, 52.83, 52.85, 52.87, 52.89, [52.91, if applicable], and 52.97 [and Appendix ___ to 10 CFR Part 52] have been met;
 - C. There is reasonable assurance that the facility will be constructed and will operate in conformity with the application, as amended, the provisions of the Act, and the applicable regulations set forth in 10 CFR Chapter I, except as exempted from compliance in Section 2.F below;
 - D. There is reasonable assurance (i) that the activities authorized by this COL can be conducted without endangering the health and safety of the public and (ii) that such activities will be conducted in compliance with the applicable regulations set forth in 10 CFR Chapter I, except as exempted from compliance in Section 2.F below;
 - E. The licensee is technically and financially qualified to engage in the activities authorized by this COL in accordance with the applicable regulations set forth in 10 CFR Chapter I;
 - F. The licensee has satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements."
 - G. The issuance of this license will not be inimical to the common defense and security or to the health and safety of the public;
 - H. The issuance of this license is in accordance with 10 CFR Part 51 and all applicable requirements have been satisfied; and
 - I. The receipt, possession, and use of source, byproduct, and special nuclear material as authorized by this license will be in accordance with the applicable regulations in 10 CFR Parts 30, 40, and 70.
2. On the basis of the foregoing findings regarding this facility, COL No. NPF-[XX] is hereby issued to [licensee], to read as follows:
 - A. This license applies to the [Name of Nuclear Facility], a light-water nuclear reactor and associated equipment (the facility), owned by the licensee. The facility is located and is described in the licensee's final safety analysis report (FSAR), as supplemented and amended, and the licensee's environmental report, as supplemented and amended.
 - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses the licensee:
 - (1) Pursuant to Sections 103 and 185.b of the Act and 10 CFR Part 52, to construct, possess, use, and operate the facility at the designated location in accordance with the procedures and limitations set forth in this license;
 - (2) (i) Pursuant to the Act and 10 CFR Part 70, to receive and possess at any time, special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, described in the FSAR, as supplemented and amended;

(ii) Pursuant to the Act and 10 CFR Part 70, to use special nuclear material as reactor fuel, after the finding in Section 2.D(1) of this license has been made, in accordance with the limitations for storage and amounts required for reactor operation, and described in the FSAR, as supplemented and amended;

- (3) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use, at any time, any byproduct, source, and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
 - (4) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use in amounts as required, any byproduct, source, or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
 - (5) Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. The license is subject to, and the licensee shall comply with, all applicable provisions of the Act, and the rules, regulations, and orders of the Commission, including the COL inspections, tests, analyses, and acceptance criteria (ITAAC) contained in Appendix A of this license.
- D. The license is subject to, and the licensee shall comply with the conditions set forth in 10 CFR Chapter I, now or hereafter applicable [consistent with the requirements in Section VIII of Appendix ___ to 10 CFR Part 52]; and the conditions specified and incorporated below:

(1) **Nuclear Fuel Loading**

- (i) The licensee shall state under oath or affirmation to the Commission that the acceptance criteria in the COL ITAAC have been met.
- (ii) The licensee is authorized to load fuel into the reactor vessel and perform precritical testing (zero power) after the Commission has found, in accordance with 10 CFR 52.103(g), that the acceptance criteria have been met.

(2) **Low-Power Testing**

Upon approval of the Director of the Office of Nuclear Reactor Regulation, the licensee is authorized to perform low-power testing and operate the facility at reactor steady-state core power levels, not in excess of [XX] megawatts thermal (5-percent power), in accordance with the conditions specified herein.

(3) **Maximum Power Level**

Upon approval of the Director of the Office of Nuclear Reactor Regulation, the licensee is authorized to perform power ascension testing and operate the facility at reactor steady-state core power levels, not in excess of [XXXX] megawatts thermal (100 percent power), in accordance with the conditions specified herein.

(4) **Incorporation**

The COL ITAAC, plant-specific Technical Specifications, Environmental Protection Plan, and Antitrust Conditions contained in Appendices A, B, C, and D, respectively, of this license are hereby incorporated into this license.

- E. The licensee shall report any violations of the requirements in Section 2.D of this license within 24 hours. Initial notification shall be made in accordance with the provisions of 10 CFR 50.72, with written follow up in accordance with the procedures described in 10 CFR 50.73.
- F. The following exemptions are authorized by law and will not endanger life or property or the common defense and security. Certain special circumstances are present and these exemptions are otherwise in the public interest. Therefore, these exemptions are hereby granted.

[(1) LISTING OF EXEMPTIONS FROM DESIGN CERTIFICATION RULE (DCR)]
[(2) LISTING OF EXEMPTIONS WHICH ARE OUTSIDE THE SCOPE OF DCR]

- G. The licensee shall fully implement and maintain in effect all provisions of the physical security, guard training and qualification, safeguards contingency plans, and all amendments made pursuant to the authority of 10 CFR 50.90, 50.54(p), 52.97[, and Section VIII of Appendix ___ to Part 52] when nuclear fuel is first received onsite, and continuing until all nuclear fuel is permanently removed from the site.

- H. The licensee shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.
- I. The following operational requirements that are applicable to this license will become effective after the Commission finds that the acceptance criteria in this license (COL ITAAC) have been met in accordance with 10 CFR 52.103(g):
 - (1) emergency plans,
 - (2) technical specifications,
 - (3) . . .
- J. After the Commission has made the finding required by 10 CFR 52.103(g), the COL ITAAC [not including the Tier 1 information from the referenced design certification rule (DCR)] do not constitute regulatory requirements either for licensees or for renewal of the license; except for specific ITAAC, which are the subject of a Section 103(a) hearing, their expiration will occur upon final Commission action in such proceeding.
- K. This license is effective as of the date of issuance and shall expire at midnight on [the date 40 years from the date of issuance].

FOR THE NUCLEAR REGULATORY COMMISSION

Samuel J. Collins, Director
Office of Nuclear Reactor Regulation

- Appendices: Appendix A - COL ITAAC [including Tier 1 information]
 Appendix B - Technical Specifications [plant-specific]
 Appendix C - Environmental Protection Plan
 Appendix D - Antitrust Conditions

Date of Issuance: