

GENERIC COMBINED LICENSE

[NAME OF NUCLEAR FACILITY]

[NAME OF NUCLEAR FACILITY OWNER]

Docket No. 52-[XXX]

License No. NPF-[XXX]

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for a combined license (COL) filed by [*name of nuclear facility and identification of owner(s) (the licensee)*][, which references Appendix \_\_\_ to 10 CFR Part 52,] [, and/which references *Early Site Permit No. ESP-XXX*] complies with the applicable standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission regulations set forth in 10 CFR Chapter I, and all required notifications to other agencies or bodies have been duly made;
  - B. 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 Commission regulations set forth in 10 CFR Chapter I, except as exempted from compliance in Section 2.F below;
  - C. 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 Commission regulations set forth in 10 CFR Chapter I, except as exempted from compliance in Section 2.F below;
  - D. The licensee is technically and financially qualified to engage in the activities authorized by this COL in accordance with the Commission regulations set forth in 10 CFR Chapter I;
  - E. The licensee has satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements."
  - F. The issuance of this license will not be inimical to the common defense and security or to the health and safety of the public;
  - G. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs and considering reasonable available alternatives, the issuance of this license subject to the conditions for protection of the environment set forth herein is in accordance with Subpart A of 10 CFR Part 51 and all applicable requirements have been satisfied; and
  - H. 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.

- [1. *Placeholder for Commission finding in accordance with 10 CFR 52.97(a)(2) that certain acceptance criteria in one or more of the inspections, tests, analyses, and acceptance criteria (ITAAC) in a referenced early site permit (including limited work authorization) or standard design certification have been met.*]
2. On the basis of the foregoing findings regarding this facility, COL No. NPF-[XXX] is hereby issued to [Name of 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 [describe individual facility location as provided in FSAR in sufficient detail to avoid confusion concerning the facility location, e.g., on a 2000 acre site on the east bank of the Glacier River approximately 50 miles southwest of Summertown, MT] 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 [Name of 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.(3) 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) (i) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use, at any time, such 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 that do not exceed the quantities in Schedule C of 10 CFR 30.72, and does not include uranium hexafluoride in excess of 50 kilograms in a single container or 1000 kilograms total;  
(ii) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use, after the finding in Section 2.D.(3), 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)
  - (i) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use in amounts not exceeding those specified in Section 2.B.(3)(i) above, any byproduct, source, or special nuclear material that is not (1) in unsealed form; (2) on foils or plated surfaces, or (3) sealed in glass, for sample analysis or instrument calibration or other activity associated with radioactive apparatus or components;
  - (ii) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess and use, after the finding in Section 2.D.(3), in amounts as required, any byproduct, source, or special nuclear material without restriction as to chemical or physical form, for sample analysis or instrument calibration or other activity 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.

*[Also, provided that the applicant specifically requests approval to transfer spent fuel between/among units at the same site, provides the necessary supporting evaluations in its FSAR to demonstrate compliance with applicable regulations, and the NRC provides its approval in the SER, the following provision may appear in the license:*

- (6) *Pursuant to the Act and 10 CFR Parts 30 and 70, to receive, possess, and store, but not separate, such byproduct and special nuclear materials [irradiated fuel assemblies containing special nuclear material] as may be produced by the operation of Unit X . Transshipment of Unit X spent fuel to Unit Y shall be in accordance with the requirements, procedures and limitations described in or incorporated by reference in the FSAR.]*

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 conditions set forth in 10 CFR Chapter I, now or hereafter in effect.

D. The license is subject to, and the licensee shall comply with the conditions specified and incorporated below:

- (1) Geologic mapping

The licensee shall perform geologic mapping of excavations for safety-related , *seismic Category I, and seismic Category II* structures; evaluate any geologic features discovered in the excavations; and notify the Director of the Office of New Reactors, or the Director's designee, once excavations for these structures are open for examination by the NRC staff.

(2) Changes during Construction

*[placeholder for license condition that will govern the conditions under which a licensee may install and test changes to the facility pending NRC approval of any license amendments requested following issuance of the combined license and prior to the Commission making the finding per 10 CFR 52.103(g).]*

(3) Nuclear Fuel Loading

- (i) The licensee shall notify the Director of the Office of New Reactors, or the Director's designee, that all ITAAC included in Appendix A to this license are complete.
- (ii) The licensee is authorized to load fuel into the reactor vessel after the Commission has found, in accordance with 10 CFR 52.103(g), that all the acceptance criteria in the ITAAC contained in Appendix A to this license are met.

(4) Pre-critical and Criticality Testing

(i) The licensee is authorized to perform pre-critical and criticality testing (zero power), as described in the FSAR, after the Commission has made the finding in Section 2.D.(3)(ii) of this license.

(ii) The licensee shall perform pre-critical and criticality testing, as described in the FSAR, including the following design-specific tests:

*[Identify any design-specific demonstrations tests that must be performed during the pre-critical and criticality testing phase of the initial test program]*

(iii) Following completion of pre-critical and criticality testing (zero percent power), including the design-specific tests identified in Section 2.D.(4)(ii), the licensee shall review and evaluate individual test results and confirm that the test results are within the range of acceptable values predicted or otherwise confirm that the tested systems perform their specified functions in accordance with the FSAR.

(ii) The licensee shall provide written notification to the Director of the Office of New Reactors, or the Director's designee, within 14 days of successful completion of pre-critical and criticality testing, including the design-specific tests identified in Section 2.D.(4)(ii).

(5) Low-Power Testing

(i) Upon submission of notification of successful completion of pre-critical and criticality testing, the licensee is authorized to perform low-power testing (up to 5-percent thermal power), as described in the FSAR, and operate the facility at reactor steady-state core power levels in accordance with the conditions specified herein.

(ii) The licensee shall perform low-power testing, as described in the FSAR, including the following design-specific tests:

*[Identify any design-specific demonstrations tests that must be performed during the low-power testing phase of the initial test program]*

(iii) Following completion of low-power testing, including the design-specific tests identified in Section 2.D.(5)(ii), the licensee shall review and evaluate individual test results and confirm that the test results are within the range of acceptable values predicted or otherwise confirm that the tested systems perform their specified functions in accordance with the FSAR.

(iii) The licensee shall provide written notification to the Director of the Office of New Reactors, or the Director's designee, within 14 days of successful completion of low-power testing, including the design-specific tests identified in Section 2.D.(5)(ii).

(6) Power Ascension Testing

(i) Upon submission of notification of successful completion of low-power testing, the licensee is authorized to perform power ascension testing (up to 100-percent thermal power), as described in the FSAR, and operate the facility at reactor steady-state core power levels in accordance with the conditions specified herein.

(ii) The licensee shall perform power-ascension testing, as described in the FSAR, including the following design-specific tests:

*[Identify any design-specific demonstrations tests that must be performed during the power-ascension testing phase of the initial test program]*

(iii) Following completion of power ascension testing, including the design-specific tests identified in Section 2.D.(6)(ii), the licensee shall review and evaluate individual test results and confirm that the test results are within the range of acceptable values predicted or otherwise confirm that the tested systems perform their specified functions in accordance with the FSAR.

(iii) The licensee shall provide written notification to the Director of the Office of New Reactors, or the Director's designee, within 14 days of successful completion of power ascension testing, including the design-specific tests identified in Section 2.D.(6)(ii).

(7) Maximum Power Level

Upon submission of notification of successful completion of power ascension testing, including the design-specific tests identified in Section 2.D.(6)(ii), the licensee is authorized to operate the facility at reactor steady state core power levels (100-percent thermal power) not to exceed

*[insert maximum power level in megawatts thermal for facility]*, as described in the FSAR, in accordance with the conditions specified herein.

(8) Design-Specific Testing

The licensee shall notify the Director of the Office of New Reactors, or the Director's designee, in writing within 14 days after it determines that it has successfully completed the design-specific testing identified below and confirmed that the test results are within the range of acceptable values predicted or otherwise confirmed that the tested systems performed their specified functions in accordance with the FSAR before achieving full-power for the first time.

*[Licensees referencing the AP1000 certified design.*

*The licensee shall perform the following tests:*

- i. In-Containment Refueling Water Storage Tank (IRWST) Heatup Test (as described in FSAR Section 14.2.9.1.3 Item (h))*
- ii. Pressurizer Surge Line Stratification Evaluation (as described in FSAR Section 14.2.9.1.7 Item (d))*
- iii. Reactor Vessel Internals Vibration Testing (as described in FSAR Section 14.2.9.1.9 – Prototype Test)*
- iv. Natural Circulation Tests (as described in FSAR Sections 14.2.10.3.6 and 14.2.10.3.7)*
- v. Rod Cluster Control Assembly Out of Bank Measurements (as described in FSAR Section 14.2.10.4.6)*
- vi. Load Follow Demonstration (as described in FSAR Section 14.2.10.4.22)*
- vii. Core Makeup Tank Heated Recirculation Tests (as described in FSAR Section 14.2.9.1.3 Items (k) and (w))*
- viii. Automatic Depressurization System Blowdown Test (as described in FSAR Section 14.2.9.1.3 Item (s))*

(9) Reporting Requirements

(i) The licensee shall report within 30 days of change and in accordance with 10 CFR 50.59(d) any changes to the initial test program described in FSAR Section 14, Initial Test Program, made in accordance with the provisions of 10 CFR 50.59 or 10 CFR Part 52, Appendix *[insert referenced DCR appendix]*, Section VIII, "Processes for Changes and Departures."

(ii) The licensee shall report any violations of the requirements in Section 2.D.(3)(ii), Section 2.D.(4), Section 2.D.(5), Section 2.D.(6), and Section 2.D.(7) *[and Section 2.D.(8) if specific power levels are identified for testing,]* 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 administrative procedures described in 10 CFR 50.73.

(10) Incorporation

The ITAAC, Technical Specifications, and Environmental Protection Plan contained in Appendices A, B, and C, respectively, of this license are hereby incorporated into this license.

(11) Operational Program Implementation

The licensee shall implement the programs or portions of programs identified in [FSAR Table 13.4-XXX] on or before the associated milestones in [FSAR Table 13.4-XXX].

(12) Operational Program Implementation Schedule

No later than 12 months after issuance of the COL, the licensee shall submit to the Director of the Office of New Reactors, or the Director's designee, a schedule for completing the milestones set forth in [FSAR Table 13.4-XXX]. The schedule shall be updated every 6 months until 12 months before scheduled fuel loading, and every month thereafter until all the milestones have been completed or the plant has been placed in commercial service, whichever comes first. This schedule shall provide for the availability of test specifications, test procedures, and the startup administration manual for the initial test program for NRC inspection 60 days prior to their intended use.

(13) Operational Requirements

The following operational requirements that are applicable to this license will become effective when the Commission finds that the acceptance criteria in this license (ITAAC) have been met in accordance with 10 CFR 52.103(g):

- (1) technical specifications,
- (2) ....

(14) Site-specific or Licensee-specific Conditions

- i. Facility-specific license conditions associated with site or licensee that were identified as part of the combined license review
- ii. Permit conditions from a referenced ESP, in accordance with 10 CFR 52.24(b), that have not been met at the time of license issuance
- iii. *[Placeholder for licensee notification requirements associated with ITAAC maintenance]*

E. The licensee shall maintain the guidance and strategies developed in accordance with 10 CFR 50.54(hh)(2).

F. (1A) The following exemptions from any part of the referenced design certification rule meet the requirements of 10 CFR 52.93(a)(1) and Section

VIII.A.4, VIII.B.4, or VIII.C of Appendix [*insert referenced DCR appendix*] to 10 CFR Part 52, are authorized by law, special circumstances are present in that [*FILL IN THE BLANK, as described in the application and NUREG-XXXX, the staff SER dated XXXX,*] and are hereby granted:

*[(1A) PROVIDE A LISTING OF EXEMPTIONS GRANTED TO THE LICENSEE FROM THE SCOPE OF A REFERENCED DESIGN CERTIFICATION RULE (DCR)]*

(1B) The following exemptions from Commission regulations were granted in the design certification rule that is referenced in the application:

*[(1B) PROVIDE A LISTING OF EXEMPTIONS GRANTED IN THE REFERENCED DESIGN CERTIFICATION RULE]*

(2) The following specific exemptions which are outside the scope of the design certification rule referenced in the application meet the requirements of 10 CFR 52.93(a)(2), are authorized by law, special circumstances are present in that [*FILL IN THE BLANK, as described in the application and NUREG-XXXX, the staff SER dated XXXX,*] and are hereby granted:

*[(2) PROVIDE A LISTING OF EXEMPTIONS WHICH ARE OUTSIDE THE SCOPE OF DCR (i.e., exemptions from regulations included in the portions of the license that are site-specific or licensee-specific)]*

[(3) The following changes from an early site permit (ESP) referenced in the license are included.]

*[(3A) PROVIDE A LISTING OF VARIANCES FROM A REFERENCED EARLY SITE PERMIT]*

*[(3B) PROVIDE A LISTING OF EXEMPTIONS GRANTED IN THE REFERENCED ESP]*

- G. 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.
- H. This license is effective as of [*insert actual date of license issuance*] and shall expire at midnight on the date 40 years from the date that the Commission finds that the acceptance criteria in the combined license are met in accordance with 10 CFR 52.103(g). [*Placeholder for expiration of the 10 CFR 50.109 provisions if the requirements of 10 CFR 52.103(g) have not been met within 10 years from the date of license issuance*].

FOR THE NUCLEAR REGULATORY  
COMMISSION

Michael R. Johnson, Director  
Office of New Reactors

Appendices:

Appendix A - ITAAC [*from DCD, COL, ESP, and LWA, as applicable*]

Appendix B - Technical Specifications

Appendix C - Environmental Protection Plan

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