C.IV.1 Combined License Application Acceptance Review Checklist

The COL application must contain an FSAR that describes the facility, presents the design bases and the limits on its operation, and presents a safety analysis of the SSC of the facility as a whole. The FSAR shall include the following information, at a level sufficient to enable the Commission to reach a final conclusion on all safety matters that must be resolved by the Commission before issuance of a COL (see 10 CFR 52.79).

The NRC staff will perform a review of a COL application to determine its acceptability for docketing. During its acceptance review of a COL application, the NRC staff will use the following checklists as guides to ensure that the application addresses the technical information required by 10 CFR 52.79 and 52.80. For any items listed below that are not included in the COL application, the applicant should include a request for exemption, in accordance with 10 CFR 52.7. The NRC staff's intent in using these checklists is to ensure that the application submitted for review is complete. The acceptance review focuses on whether there is sufficient information for the staff to perform a complete review. That is, acceptance review confirms that there is no missing information and there are no applicable regulatory requirements that have not been addressed. Upon docketing, the NRC staff will perform a review of the application to determine the adequacy of the information submitted to resolve all safety issues. Sufficient information in the context of acceptance review is not interchangeable with adequate and acceptable information necessary for the staff to make a reasonable assurance finding. Therefore, the NRC staff assumes that completing its review will involve requests for additional information from the COL applicant.

The acceptance review checklist does not include the information in 10 CFR 52.79(e) for a COL applicant that references use of one or more manufactured nuclear power reactors licensed under 10 CFR Part 52, Subpart F.

Technical Information in Final Safety Analysis Report (10 CFR 52.79)

The COL application must include the following technical information required by 10 CFR 52.79:

Item	Information Required in COL Application 10 CFR 52.79(a)	FSAR Section	Yes	No
1	The application contains the following information:			
1(i)	The boundaries of the site	Sec. 2.1		
1(ii)	The proposed general location of each facility on the site	Secs. 1.1, 2.1		
1(iii)	The seismic characteristics of the proposed site with appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area and with sufficient margin for the limited accuracy, quantity, and time in which the historical data have been accumulated	Sec. 2.5		
1(iii)	The meteorological characteristics of the proposed site with appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area and with sufficient margin for the limited accuracy, quantity, and time in which the historical data have been accumulated	Sec. 2.3		

Item	Information Required in COL Application 10 CFR 52.79(a)	FSAR Section	Yes	No
1(iii)	The hydrologic characteristics of the proposed site with appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area and with sufficient margin for the limited accuracy, quantity, and time in which the historical data have been accumulated	Sec. 2.4		
1(iii)	The geologic characteristics of the proposed site with appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area and with sufficient margin for the limited accuracy, quantity, and time in which the historical data have been accumulated	Sec. 2.5		
1(iv)	The location and description of any nearby industrial, military, or transportation facilities and routes	Sec. 2.2		
1(v)	The existing and projected future population profile of the area surrounding the site	Sec. 2.1.3		
1(vi)	A description and safety assessment of the site on which the facility is to be located:			
1(vi)	• The assessment assumes a fission product release[1] from the core into the containment assuming that the facility is operated at the ultimate power level contemplated. [1] The fission product release assumed for this evaluation should be based upon a major accident, hypothesized for purposes of site analysis or postulated from considerations of possible accidental events. These accidents have generally been assumed to result in substantial meltdown of the core with subsequent release into the containment of appreciable quantities of fission products.	Ch. 15		
1(vi)	• The assessment includes an evaluation and analysis of the postulated fission product release, using the expected demonstrable containment leak rate and any fission product cleanup systems intended to mitigate the consequences of the accidents, together with the applicable site characteristics, including site meteorology, to evaluate the offsite radiological consequences.	Ch. 15		
1(vi)	Site characteristics must comply with Part 100.	Ch. 2		

Item	Information Required in COL Application 10 CFR 52.79(a)	FSAR Section	Yes	No
1(vi)	The evaluation concludes that:			
1(vi) (A)	• An individual located at any point on the boundary of the exclusion area for any 2-hour period following the onset of the postulated fission product release, would not receive a radiation dose in excess of 25 rem[1] total effective dose equivalent (TEDE). [1] A whole body dose of 25 rem has been stated to correspond numerically to the once in a lifetime accidental or emergency dose for radiation workers which, according to NCRP recommendations at the time could be disregarded in the determination of their radiation exposure status (see NBS Handbook 69 dated June 5, 1959). However, its use is not intended to imply that this number constitutes an acceptable limit for an emergency dose to the public under accident conditions. Rather, this dose value has been set forth in this section as a reference value, which can be used in the evaluation of plant design features with respect to postulated reactor accidents, to assure that these designs provide assurance of low risk of public exposure to radiation, in the event of an accident.	Ch. 15		
1(vi) (B)	• An individual located at any point on the outer boundary of the LPZ, who is exposed to the radioactive cloud resulting from the postulated fission product release (during the entire period of its passage) would not receive a radiation dose in excess of 25 rem TEDE.	Ch. 15		
2	A description and analysis of the SSCs of the facility, with emphasis upon performance requirements, the bases, with technical justification therefore, upon which these requirements have been established, and the evaluations required to show that the safety functions will be accomplished.	System-related chaps. and/or Ch. 15		
2	It is expected that reactors will reflect through their design, construction, and operation an extremely low probability for accidents that could result in the release of significant quantities of radioactive fission products. The descriptions shall be sufficient to permit understanding of the system designs and their relationship to safety evaluations, and include:			
2	• reactor core	Ch. 4		
2	• RCS	Ch. 5		
2	• I&C systems	Ch. 7		
2	• electrical systems	Ch. 8		
2	• containment system	Sec. 6.2		
2	• other ESF	Ch. 6		
2	• auxiliary systems	Ch. 9		
2	• emergency systems	Ch. 6		
2	• power conversion systems	Ch. 10		
2	• radioactive waste handling systems	Ch. 11		
2	• fuel handling systems	Sec. 9.1		

Item	Information Required in COL Application 10 CFR 52.79(a)	FSAR Section	Yes	No
	The following power reactor design characteristics and proposed operation will be taken into consideration by the Commission:			
2(i)	Intended use of the reactor including the proposed maximum power level and the nature and inventory of contained radioactive materials;	Ch. 1 and Ch. 11		
2(ii)	The extent to which generally accepted engineering standards are applied to the design of the reactor;	Ch. 3		
2(iii)	The extent to which the reactor incorporates unique, unusual or enhanced safety features having a significant bearing on the probability or consequences of accidental release of radioactive materials;	Ch. 1		
2(iv)	The safety features that are to be engineered into the facility and those barriers that must be breached as a result of an accident before a release of radioactive material to the environment can occur. Special attention must be directed to plant design features intended to mitigate the radiological consequences of accidents. In performing this assessment, an applicant shall assume a fission product release[1] from the core into the containment assuming that the facility is operated at the ultimate power level contemplated; [1] The fission product release assumed for this evaluation should be based upon a major accident, hypothesized for purposes of site analysis or postulated from considerations of possible accidental events. These accidents have generally been assumed to result in substantial meltdown of the core with subsequent release into the containment of appreciable quantities of fission products.	Ch. 6		
3	Identify the kinds and quantities of radioactive materials expected to be produced in the operation and the means for controlling and limiting radioactive effluents and radiation exposures within the limits set forth in 10 CFR Part 20 of this chapter:	Ch. 12		
4	The application contains the design of the facility, including:			
4	• the principle design criteria for the facility [see Attachment 1 to this appendix for a tabulated list of Appendix A to 10 CFR Part 50] establishes minimum requirements for the principal design criteria for water-cooled nuclear power plants similar in design and location to plants for which construction permits have previously been issued by the Commission and provides guidance to applicants in establishing principal design criteria for other types of nuclear power units	Sec. 3.1		
4	• the design bases and their relation to the principal design criteria	Chaps. 2–12 and 15		
4	• information relative to materials of construction, arrangement, and dimensions, sufficient to provide reasonable assurance that the design will conform to the design bases with adequate margin for safety	Chaps. 3–12		

Item	Information Required in COL Application 10 CFR 52.79(a)	FSAR Section	Yes	No
5	An analysis and evaluation of the design and performance of SSC with the objective of assessing the risk to public health and safety resulting from operation of the facility and including determination of the margins of safety during normal operations and transient conditions anticipated during the life of the facility, and the adequacy of SSCs provided for the prevention of accidents and the mitigation of the consequences of accidents	Chaps. 3–12 and 15		
5	Analysis and evaluation of ECCS cooling performance and the need for high-point vents following postulated LOCAs shall be performed in accordance with the requirements of 10 CFR 50.46 and 50.46a	Secs. 5.4.12, 6.2, 6.3		
6	A description and analysis of the fire protection design features for the reactor necessary to comply with 10 CFR Part 50, Appendix A, GDC 3, and 10 CFR 50.48	Sec. 9.5		
7	A description of protection provided against PTS events, including projected values of the reference temperature for reactor vessel beltline materials as defined in 10 CFR 50.60 and 10 CFR 50.61(b)(1) and (b)(2)	Sec. 5.3.2		
8	An analysis and description of the equipment and systems required by 10 CFR 50.44 for combustible gas control	Sec. 6.2.5		
9	The coping analyses, and any design features necessary to address SBO, as described in 10 CFR 50.63	Sec. 8.4		
10	A description of the program, and its implementation, required by 10 CFR 50.49(a) for the environmental qualification of electric equipment important to safety and the list of electric equipment important to safety that is required by 10 CFR 50.49(d)	Sec. 3.11		
11	A description of the program(s), and their implementation, necessary to ensure that the systems and components meet the requirements of the ASME O&M Code of nuclear power plants in accordance with 10 CFR 50.55a	Sec. 3.9		
12	A description of the primary containment leakage rate testing program, and its implementation, necessary to ensure that the containment meets the requirements of Appendix J to 10 CFR Part 50	Sec. 6.2.6		
13	A description of the reactor vessel material surveillance program required by Appendix H to 10 CFR Part 50 and its implementation	Sec. 5.3		
14	A description of the operator training program, and its implementation, necessary to meet the requirements of 10 CFR Part 55	Sec. 13.2		
15	A description of the program, and its implementation, for monitoring the effectiveness of maintenance necessary to meet the requirements of 10 CFR 50.65	Sec. 17.6		
16(i)	Information with respect to the design of equipment to maintain control over radioactive materials in gaseous and liquid effluents produced during normal reactor operations, as described in 10 CFR 50.34a(d)	Ch. 11		

Item	Information Required in COL Application 10 CFR 52.79(a)	FSAR Section	Yes	No
16(ii)	A description of the process and effluent monitoring and sampling program required by Appendix I to 10 CFR Part 50 and its implementation	Sec. 11.5		
17	The application contains the information with respect to compliance with technically relevant positions of the TMI requirements in 10 CFR 50.34(f), with the exception of the combustible gas control requirements of §50.34(f)(1)(xii), (f)(2)(ix), and (f)(3)(v), which have been superceded by 10 CFR 50.44 [See Attachment 2 to this appendix for §50.34(f) requirements checklist]	Sec. 1.9		
18	If the applicant seeks to use risk-informed treatment of SSCs in accordance with 10 CFR 50.69, and if so, contains the information required by 10 CFR 50.69(b)(2)	Ch. 19		
19	Information necessary to demonstrate that the plant complies with the earthquake engineering criteria in 10 CFR Part 50, Appendix S	Sec. 3.7		
20	Proposed technical resolutions of those USI and medium- and high-priority GSI which are identified in the version of NUREG-0933 current on the date up to 6 months before the docket date of the application and which are technically relevant to the design[1] (See Section C.IV.8 of this guide) [1] A certified design addresses the design-related generic issues only. If the COL application references a certified design, the COL application must address the procedural issues.	Sec. 1.9		
21	Emergency plans complying with the requirements of 10 CFR 50.47 and 10 CFR Part 50, Appendix E	Sec. 13.3		
22	All emergency plan certifications that have been obtained from the State and local governmental agencies with emergency planning responsibilities must state that: • the proposed emergency plans are practicable • these agencies are committed to participating in any further development of the plans, including any required field demonstrations • these agencies are committed to executing their responsibilities under the plans in the event of an emergency. If certifications cannot be obtained after sustained, good faith efforts by the applicant, then the application must contain information, including a utility plan, sufficient to show that the proposed plans provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at the site.	Sec. 13.3		
23	[Reserved]			

Item	Information Required in COL Application 10 CFR 52.79(a)	FSAR Section	Yes	No
24	If the application is for a nuclear power reactor design which differs significantly from LWR designs that were licensed before 1997 *or* use simplified, inherent, passive, or other innovative means to accomplish their safety functions, the application must describe how the design meets the requirements in §50.43(e) (i.e., demonstration by testing, analysis, and/or prototype).	Ch 1		
25	A description of the QA program applied to the design, and to be applied to the fabrication, construction, and testing, of the SSC of the facility. Appendix B to 10 CFR part 50 sets forth the requirements for QA programs for nuclear power plants. The description of the QA program for a nuclear power plant must include a discussion of how the applicable requirements of Appendix B to 10 CFR Part 50 have been and will be satisfied, including a discussion of how the QA program will be implemented.	Ch. 17		
26	The applicant's organizational structure, allocations or responsibilities and authorities, and personnel qualifications requirements for operation	Secs. 13.1, 13.2		
27	Managerial and administrative controls to be used to assure safe operation. Appendix B to 10 CFR Part 50 sets forth the requirements for these controls for nuclear power plants. The information on the controls to be used for a nuclear power plant shall include a discussion of how the applicable requirements of Appendix B to 10 CFR Part 50 will be satisfied.	Sec. 13.5, Ch. 17		
28	Plans for preoperational testing and initial operations	Sec. 14.2		
29(i)	Plans for conduct of normal operations, including maintenance, surveillance, and periodic testing of SSC	Sec. 13.5		
29(ii)	Plans for coping with emergencies, other than the plans required by § 52.79(a)(21)	Sec. 13.5		
30	Proposed TS prepared in accordance with the requirements of 10 CFR 50.36 and 10 CFR 50.36a	Ch. 16		
31	For nuclear power plants to be operated on multi-unit sites, an evaluation of the potential hazards to the SSC important to safety of operating units resulting from construction activities, as well as a description of the managerial and administrative controls to be used to provide assurance that the limiting conditions for operation are not exceeded as a result of construction activities at the multi-unit sites	Sec. 1.10*		
32	The technical qualifications of the applicant to engage in the proposed activities	Sec. 1.4		
33	A description of the training program required by 10 CFR 50.120	Sec. 13.2		
34	A description and plans for implementation of an operator requalification program. The operator requalification program must as a minimum, meet the requirements for those programs contained in 10 CFR 55.59.	Sec. 13.2		

Item	Information Required in COL Application 10 CFR 52.79(a)	FSAR Section	Yes	No
35(i)	A physical security plan, describing how the applicant will meet the requirements of 10 CFR Part 73 (and 10 CFR Part 11, if applicable, including the identification and description of jobs as required by §11.11(a), at the proposed facility). The plan must list tests, inspections, audits, and other means to be used to demonstrate compliance with the requirements of 10 CFR Parts 11 and 73, if applicable.	Sec. 13.6		

* Construction activities also addressed in appropriate licensing basis documents for operating unit(s)

Item	Information Required in COL Application 10 CFR 52.79(a)	FSAR Section	Yes	No
35(ii)	A description of the implementation of the physical security plan	Sec. 13.6		
36(i)	The application contains a safeguards contingency plan in accordance with the criteria set forth in Appendix C to 10 CFR Part 73. The safeguards contingency plan shall include plans for dealing with threats, thefts, and radiological sabotage, as defined in 10 CFR Part 73, relating to the special nuclear material and nuclear facilities licensed under 10 CFR Part 50 or 52 and in the applicant's possession and control. Each application for this type of license shall include the information contained in the applicant's safeguards contingency plan.[1] (Implementing procedures required for this plan need not be submitted for approval.) [1] A physical security plan that contains all the information required in both § 73.55 of this chapter and appendix C to 10 CFR part 73 satisfies the requirement for a contingency plan.	Sec. 13.6		
36(ii)	A training and qualification plan in accordance with the criteria set forth in Appendix B to 10 CFR Part 73	Sec. 13.6		
36(iii)	A description of the implementation of the safeguards contingency plan and the training and qualification plan	Sec. 13.6		
36(iv)	Each applicant who prepares a physical security plan, a safeguards contingency plan, or a guard qualification and training plan, shall protect the plans and other related Safeguards Information against unauthorized disclosure in accordance with the requirements of 10 CFR 73.21, as appropriate.	Sec. 13.6		
37	The information necessary to demonstrate how operating experience insights have been incorporated into the plant design	Sec. 1.9**		
38	For LWR designs, a description and analysis of design features for the prevention and mitigation of severe accidents (core-melt accidents), *e.g.*, challenges to containment integrity caused by core-concrete interaction, steam explosion, high-pressure core melt ejection, hydrogen combustion, and containment bypass[1] [1] See note for Item 20.	Ch. 19		
39	A description of the radiation protection program required by 10 CFR 20.1101 and its implementation	Ch. 12		
40	A description of the fire protection program required by 10 CFR 50.48 and its implementation	Sec. 9.5		

Item	Information Required in COL Application 10 CFR 52.79(a)	FSAR Section	Yes	No
41	For applications for light-water-cooled nuclear power plant combined licenses, an evaluation of the facility against the SRP revision in effect 6 months before the docket date of the application. The evaluation required by this section shall include an identification and description of all differences in design features, analytical techniques, and procedural measures proposed for a facility and those corresponding features, techniques, and measures given in the SRP acceptance criteria. Where a difference exists, the evaluation shall discuss how the proposed alternative provides an acceptable method of complying with the Commission's regulations, or portions thereof, that underlie the corresponding SRP acceptance criteria. The SRP is not a substitute for the regulations, and compliance is not a requirement	Sec. 1.9**		
42	Information demonstrating how the applicant will comply with requirements for reduction of risk from ATWS events in 10 CFR 50.62	Secs. 4.2, 15.8		
43	Information demonstrating how the applicant will comply with requirements for criticality accidents in 10 CFR 50.68	Sec. 9.1		
44	A description of the fitness-for-duty program required by 10 CFR Part 26 and its implementation	Sec. 13.7		
45	The information required by 10 CFR 20.1406	Chaps 11 and 12		
46	A description of the plant-specific PRA and its results	Ch. 19		

** COL applicants may chose to incorporate by reference topical reports or separate reports that address these items.

For a COL Application That References an Early Site Permit (ESP)

Item	Information Required in COL Application 10 CFR 52.79(b)	FSAR Section	Yes	No
1	The FSAR need not contain information or analyses submitted to the Commission in connection with the early site permit, *provided, however,* that the FSAR must either include or incorporate by reference the ESP site safety analysis report and must contain, in addition to the information and analyses otherwise required, information sufficient to demonstrate that the design of the facility falls within the site characteristics and design parameters specified in the ESP.	Sec. 2.0		
2	If the FSAR does not demonstrate that the design of the facility falls within the site characteristics and design parameters: then the application shall include a request for a variance that complies with the requirements of 10 CFR 52.39 and 10 CFR 52.93.	Letter*		
3	The FSAR must demonstrate that all terms and conditions that have been included in the ESP, other than those imposed under § 50.36b, will be satisfied by the date of issuance of the COL. Any terms or conditions of the ESP that could not be met by the time of issuance of the COL, must be set forth as terms or conditions of the COL.	Ch. 1		

4	If the ESP approves complete and integrated emergency plans, or major features of emergency plans, then the FSAR must include any new or additional information that updates and corrects the information that was provided under 10 CFR 52.17(b), and discuss whether the new or additional information materially changes the bases for compliance with the applicable requirements.	Sec. 13.3		
4	The application must identify changes to the emergency plans or major features of emergency plans that have been incorporated into the proposed facility emergency plans and that constitute or would constitute a decrease in effectiveness under §50.54(q).	Sec. 13.3		
5	If complete and integrated emergency plans are approved as part of the ESP, new certifications meeting the requirements of paragraph (a)(22) of this section are not required.	Sec. 13.3		

* Requests for variances may be included in the letter transmitting the COL application to the NRC for acceptance and review.

For a COL Application That References a Standard Design Approval

Item	Information Required in COL Application 10 CFR 52.79(c)	FSAR Section	Yes	No
1	The FSAR need not contain information or analyses submitted to the Commission in connection with the design approval, *provided, however,* that the FSAR must either include or incorporate by reference the standard design approval FSAR and must contain, in addition to the information and analyses otherwise required, information sufficient to demonstrate that the characteristics of the site fall within the site parameters specified in the design approval.	Sec. 2.0		
1	In addition, the plant-specific PRA information must use the PRA information for the design approval and must be updated to account for site-specific design information and any design changes or departures.	Ch. 19		
2	The FSAR must demonstrate that all terms and conditions that have been included in the final design approval will be satisfied by the date of issuance of the COL.	Ch. 1		

For a COL Application That References a Standard Design Certification

Item	Information Required in COL Application 10 CFR 52.79(d)	FSAR Section	Yes	No
1	The FSAR need not contain information or analyses submitted to the Commission in connection with the design certification, *provided, however,* that the FSAR must either include or incorporate by reference the standard design certification FSAR and must contain, in addition to the information and analyses otherwise required, information sufficient to demonstrate that the site characteristics fall within the site parameters specified in the design certification.	Sec. 2.0		
1	In addition, the plant-specific PRA information must use the PRA information for the design certification and must be updated to account for site-specific design information and any design changes or departures.	Ch. 19		
2	The FSAR must demonstrate that the interface requirements established for the design under 10 CFR 52.47 have been met.	Sec. 1.8		

3	The FSAR must demonstrate that all requirements and restrictions set forth in the referenced design certification rule, other than those imposed under §50.36b, must be satisfied by the date of issuance of the COL. Any requirements and restrictions set forth in the referenced design certification rule that could not be satisfied by the time of issuance of the COL, must be set forth as terms or conditions of the COL.	Ch. 1		

For a COL Application That References the use of one or more manufactured nuclear power reactors licensed under subpart F of this part

Item	Information Required in COL Application 10 CFR 52.79(e)	FSAR Section	Yes	No
1	The FSAR need not contain information or analyses submitted to the Commission in connection with the manufacturing license, *provided, however,* that the FSAR must either include or incorporate by reference the manufacturing license FSAR and must contain, in addition to the information and analyses otherwise required, information sufficient to demonstrate that the site characteristics fall within the site parameters specified in the manufacturing license.	Sec. 2.0		
1	In addition, the plant-specific PRA information must use the PRA information for the manufactured reactor and must be updated to account for site-specific design information and any design changes or departures.	Ch. 19		
2	The FSAR must demonstrate that the interface requirements established for the design have been met.	Sec. 1.8		
3	The FSAR must demonstrate that all terms and conditions that have been included in the manufacturing license, other than those imposed under § 50.36b, will be satisfied by the date of issuance of the COL. Any terms or conditions of the manufacturing license that could not be met by the time of issuance of the COL, must be set forth as terms or conditions of the COL.	Ch. 1		

Additional Technical Information (10 CFR 52.80)

The COL application must include the following additional technical information per 10 CFR 52.80:

Item	Information Required in COL Application 10 CFR 52.80	FSAR Section	Yes	No
a	The proposed inspections, tests, and analyses, including those applicable to emergency planning, that the licensee shall perform, and the acceptance criteria which are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, the facility has been constructed and will operate in conformity with the combined license, the provisions of the Atomic Energy Act, and the NRC's regulations	Sec. 14.3		
(a)1	If the COL application references an early site permit with ITAAC, the ESP ITAAC must apply to those aspects of the COL which are approved in the ESP.	Sec. 14.3		
(a)2	If the COL application references a standard design certification, the ITAAC contained in the certified design must apply to those portions of the facility design which are approved in the design certification.	Sec. 14.3		

Item	Information Required in COL Application 10 CFR 52.80	FSAR Section	Yes	No
(a)3	If the COL application references an ESP with ITAAC or a standard design certification or both, the application may include a notification that a required inspection, test, or analysis in the ITAAC has been successfully completed and that the corresponding acceptance criterion has been met. The *Federal Register* notification required by §52.85 must indicate that the application includes this notification.			
b	A complete environmental report as required by 10 CFR 51.50(c)			
c	If the applicant wishes to be able to perform the activities at the site allowed by 10 CFR 50.10(e) before issuance of the COL, the applicant must identify and describe the activities that are requested and propose a plan for redress of the site in the event that the activities are performed and either construction is abandoned or the COL is revoked. The application must demonstrate that there is reasonable assurance that redress carried out under the plan will achieve an environmentally stable and aesthetically acceptable site suitable for whatever non-nuclear use may conform with local zoning laws.			

Administrative Requirements

The COL application meets the following administrative requirements:

Item	Requirements	Yes	No
52.75	The COL application complies with the relevant sections of 10 CFR 52.3 and 10 CFR 50.30 of this chapter.		
52.3	(b)(2) The application is addressed to the NRC's Document Control Desk, with a copy sent to the appropriate Regional Office, and a copy to the appropriate NRC Resident Inspector, if one has been assigned to the site of the facility.		
52.3	(b)(2) If the application is on paper, the submission must be the signed original.		
50.30	The COL application is submitted under oath or affirmation [10 CFR 50.30(b)].		
52.77	The application must contain all of the information required by 10 CFR 50.33.		
50.33	(a) Name of applicant		
50.33	(b) Address of applicant		
50.33	(c) Description of business or occupation of applicant`		
50.33	(d)(1) If applicant is an individual, citizenship is provided in the application.		
50.33	(d)(2) If applicant is a partnership, the name, citizenship, and address of each partner and the principal location of where the partnership does business is provided in the application.		
50.33	(d)(3) If applicant is a corporation or an unincorporated association, the application includes: • the state where it is incorporated or organized and the principal location where it does business • the names, addresses, and citizenship of its directors and principal officers • whether it is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government, and, if so, details are provided in the application		

Item	Requirements	Yes	No
50.33	(d)(4) If the applicant is acting as agent or representative of another person in filing the application, identify the principal and furnish information required by 10 CFR 50.33(d) with respect to such principal.		
50.33	(e) The class of license applied for, the use to which the facility will be put, the period of time for which the license is sought, and a list of other licenses, except operator's licenses, issued or applied for in connection with the proposed facility		
50.33	(f)(1,2) If the application is for a construction permit, the applicant shall submit information that demonstrates that the applicant possesses or has reasonable assurance of obtaining the funds necessary to cover estimated construction costs and related fuel cycle costs. The applicant shall submit estimates of the total construction costs of the facility and related fuel cycle costs, and shall indicate the source(s) of funds to cover these costs. If the application is for an operating license, the applicant shall submit information that demonstrates the applicant possesses or has reasonable assurance of obtaining the funds necessary to cover estimated operation costs for the period of the license. The applicant shall submit estimates for total annual operating costs for each of the first five years of operation of the facility. The applicant shall also indicate the source(s) of funds to cover these costs. An applicant seeking to renew or extend the term of an operating license for a power reactor need not submit the financial information that is required in an application for an initial license. Applicants to renew or extend the term of an operating license for a nonpower reactor shall include the financial information that is required in an application for an initial license.		
50.33	(f)(3) If the application is for a combined license under Subpart C of Part 52 of this chapter, the applicant shall submit the information described in paragraphs (f)(1) and (f)(2) of this section.		
50.33	(f)(4) Each application for a construction permit, operating license, or COL submitted by a newly-formed entity organized for the primary purpose of constructing and/or operating a facility must also include information showing: • the legal and financial relationships it has or proposes to have with its stockholders or owners • the stockholders' or owners' financial ability to meet any contractual obligation to the entity which they have incurred or proposed to incur • any other information considered necessary by the Commission to enable it to determine the applicant's financial qualification		
50.33	(f)(5) The Commission may request an established entity or newly-formed entity to submit additional or more detailed information respecting its financial arrangements and status of funds if the Commission considers this information appropriate. This may include information regarding a licensee's ability to continue the conduct of the activities authorized by the license and to decommission the facility		

Item	Requirements	Yes	No
50.33	(g) If the application is for an operating license or COL for a nuclear power reactor, or if the application is for an ESP and contains plans for coping with emergencies under § 52.17(b)(2)(ii) of this chapter, the applicant shall submit radiological emergency response plans of State and local governmental entities in the United States that are wholly or partially within the plume exposure pathway emergency planning zone (EPZ),[1] as well as the plans of State governments wholly or partially within the ingestion pathway EPZ.[2] If the application is for an ESP that, under 10 CFR 52.17(b)(2)(i), proposes major features of the emergency plans describing the EPZs, then the descriptions of the EPZs must meet the requirements of this paragraph. Generally, the plume exposure pathway EPZ for nuclear power reactors shall consist of an area about 10 miles (16 km) in radius and the ingestion pathway EPZ shall consist of an area about 50 miles (80 km) in radius. The exact size and configuration of the EPZs surrounding a particular nuclear power reactor shall be determined in relation to the local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries. The size of the EPZs also may be determined on a case-by-case basis for gas-cooled reactors and for reactors with an authorized power level less than 250 MW thermal. The plans for the ingestion pathway shall focus on such actions as are appropriate to protect the food ingestion pathway. [1] EPZs are discussed in NUREG-0396, EPA 520/1-78-016, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light-Water Nuclear Power Plants," December 1978. [2] If the State and local emergency response plans have been previously provided to the NRC for inclusion in the facility docket, the applicant need only provide the appropriate reference to meet this requirement.		
50.33	(h) If the applicant, other than an applicant for a COL, proposes to construct or alter a production or utilization facility, the application shall state the earliest and latest dates for completion of the construction or alteration.		
50.33	(i) If the proposed activity is the generation and distribution of electric energy under a class 103 license, a list of the names and addresses of such regulatory agencies as may have jurisdiction over the rates and services incident to the proposed activity, and a list of trade and news publications which circulate in the area where the proposed activity will be conducted and which are considered appropriate to give reasonable notice of the application to those municipalities, private utilities, public bodies, and cooperatives, which might have a potential interest in the facility.		
50.33	(j) If the application contains Restricted Data or other defense information, it shall be prepared in such manner that all Restricted Data and other defense information are separated from the unclassified information.		
50.33	(k)(1) For an application for an operating license or COL for a production or utilization facility, information in the form of a report, as described in 10 CFR 50.75, indicating how reasonable assurance will be provided that funds will be available to decommission the facility.		

Attachment 2. 10 CFR 50.34(f), "Additional TMI-Related Requirements" Checklist

The application contains the information with respect to compliance with technically relevant positions of the TMI requirements in 10 CFR 50.34(f), with the exception of the combustible gas control requirements of §50.34(f)(1)(xii), (f)(2)(ix), and (f)(3)(v), which have been superceded by 10 CFR 50.44.

50.34(f) Item	Requirement	Action Plan Item*	N/A	Yes	No
(1) To satisfy the following requirements, the application shall provide sufficient information to describe the nature of the studies, how they are to be conducted, estimated submittal dates, and a program to ensure that the results of these studies are factored into the final design of the facility. For licensees identified in the introduction to paragraph (f) of this section, all studies shall be completed no later than 2 years following issuance of the construction permit or manufacturing license. For all other applicants, the studies must be submitted as part of the FSAR.					
(1)(i)	Perform a plant/site-specific PRA, the aim of which is to seek such improvements in the reliability of core and containment heat removal systems as are significant and practical and do not impact excessively on the plant.	II.B.8			
(1)(ii)	Perform an evaluation of the proposed auxiliary feedwater system (AFWS), to include (PWRs only):	II.E.1.1			
	(A) A simplified AFWS reliability analysis using event-tree and fault-tree logic techniques				
	(B) A design review of AFWS				
	(C) An evaluation of AFWS flow design bases and criteria				
(1)(iii)	Perform an evaluation of the potential for and impact of reactor coolant pump seal damage following small-break LOCA with LOOP. If damage cannot be precluded, provide an analysis of the limiting small-break LOCA with subsequent reactor coolant pump seal damage.	II.K.2.16 and II.K.3.25			
(1)(iv)	Perform an analysis of the probability of a small-break LOCA caused by a stuck-open power-operated relief valve (PORV). If this probability is a significant contributor to the probability of small-break LOCAs from all causes, provide a description and evaluation of the effect on small-break LOCA probability of an automatic PORV isolation system that would operate when the RCS pressure falls after the PORV has opened. (PWRs only)	II.K.3.2			

* Alphanumeric designations corresponding to related action plan items in NUREG-0718 and NUREG-0660, are provided herein for information only.

50.34(f) Item	Requirement	Action Plan Item*	N/A	Yes	No
(1)(v)	Perform an evaluation of the safety effectiveness of providing for separation of high-pressure coolant injection (HPCI) and RCIC system initiation levels so that the RCIC system initiates at a higher water level than the HPCI system, and of providing that both systems restart on low water level. (For plants with high-pressure core spray [HPCS] systems in lieu of HPCI systems, substitute the words, "high-pressure core spray" for "high-pressure coolant injection" and "HPCS" for "HPCI".) (BWRs only)	II.K.3.13			
(1)(vi)	Perform a study to identify practicable system modifications that would reduce challenges and failures of relief valves, without compromising the performance of the valves or other systems. (BWRs only)	II.K.3.16			
(1)(vii)	Perform a feasibility and risk assessment study to determine the optimum automatic depressurization system (ADS) design modifications that would eliminate the need for manual activation to ensure adequate core cooling. (BWRs only)	II.K.3.18			
(1)(viii)	Perform a study of the effect on all core-cooling modes under accident conditions of designing the core spray and low-pressure coolant injection systems to ensure that the systems will automatically restart on loss of water level, after having been manually stopped, if an initiation signal is still present. (BWRs only)	II.K.3.21			
(1)(ix)	Perform a study to determine the need for additional space cooling to ensure reliable long-term operation of the RCIC and HPCI systems, following a complete LOOP to the plant for at least 2 hours. (For plants with high-pressure core spray [HPCS] systems in lieu of high-pressure coolant injection systems, substitute the words, "high-pressure core spray" for "high-pressure coolant injection" and "HPCS" for "HPCI".) (BWRs only)	II.K.3.24			
(1)(x)	Perform a study to ensure that the automatic depressurization system, valves, accumulators, and associated equipment and instrumentation will be capable of performing their intended functions during and following an accident situation, taking no credit for non-safety related equipment or instrumentation, and accounting for normal expected air (or nitrogen) leakage through valves. (BWRs only)	II.K.3.28			
(1)(xi)	Provide an evaluation of depressurization methods, other than by full actuation of the automatic depressurization system, that would reduce the possibility of exceeding vessel integrity limits during rapid cooldown. (BWRs only)	II.K.3.45			

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50.34(f) Item	Requirement	Action Plan Item*	N/A	Yes	No
(2) To satisfy the following requirements, the application shall provide sufficient information to demonstrate that the required actions will be satisfactorily completed by the operating license stage. This information is of the type customarily required to satisfy 10 CFR 50.35(a)(2) or to address unresolved GSI.					
(2)(i)	Provide a simulator capability that correctly models the control room and includes the capability to simulate small-break LOCAs. (Applicable to construction permit applicants only)	I.A.4.2			
(2)(ii)	Establish a program, to begin during construction and follow into operation, for integrating and expanding current efforts to improve plant procedures. The scope of the program shall include emergency procedures, reliability analyses, human factors engineering, crisis management, operator training, and coordination with [the Institute of Nuclear Power Operations (INPO)] and other industry efforts. (Applicable to construction permit applicants only)	I.C.9			
(2)(iii)	Provide, for Commission review, a control room design that reflects state-of-the-art human factors principles prior to committing to fabrication or revision of fabricated control room panels and layouts.	I.D.1			
(2)(iv)	Provide a plant safety parameter display console that will display to operators a minimum set of parameters defining the safety status of the plant, capable of displaying a full range of important plant parameters and data trends on demand, and capable of indicating when process limits are being approached or exceeded.	I.D.2			
(2)(v)	Provide for automatic indication of the bypassed and operable status of safety systems.	I.D.3			
(2)(vi)	Provide the capability of high-point venting of noncondensible gases from the RCS, and other systems that may be required to maintain adequate core cooling. Systems to achieve this capability shall be capable of being operated from the control room, and their operation shall not lead to an unacceptable increase in the probability of LOCA or an unacceptable challenge to containment integrity.	II.B.1			

* Alphanumeric designations corresponding to related action plan items in NUREG-0718 and NUREG-0660, are provided herein for information only.

50.34(f) Item	Requirement	Action Plan Item*	N/A	Yes	No
(2)(vii)	Perform radiation and shielding design reviews of spaces around systems that may, as a result of an accident, contain accident source term[11] radioactive materials, and design as necessary to permit adequate access to important areas and to protect safety equipment from the radiation environment. [11] Footnote 11 in 10 CFR 50.34(f) reads as follows: "The fission product release assumed for these calculations should be based upon a major accident, hypothesized for purposes of site analysis or postulated from considerations of possible accidental events, that would result in potential hazards not exceeded by those considered credible. Such accidents have generally been assumed to result in substantial meltdown of the core with subsequent release of appreciable quantities of fission products."	II.B.2			
(2)(viii)	Provide a capability to promptly obtain and analyze samples from the RCS and containment that may contain accident source term[11] radioactive materials without radiation exposures to any individual exceeding 5 rems to the whole body or 50 rems to the extremities. Materials to be analyzed and quantified include certain radionuclides that are indicators of the degree of core damage (e.g., noble gases, radioiodines and cesiums, and nonvolatile isotopes), hydrogen in the containment atmosphere, dissolved gases, chloride, and boron concentrations.	II.B.3			
(2)(x)	Provide a test program and associated model development, and conduct tests to qualify RCS relief and safety valves and, for PWRs, PORV block valves, for all fluid conditions expected under operating conditions, transients, and accidents. Consideration of ATWS conditions shall be included in the test program. Actual testing under ATWS conditions need not be carried out until subsequent phases of the test program are developed.	II.D.1			
(2)(xi)	Provide direct indication of relief and safety valve position (open or closed) in the control room.	II.D.3			
(2)(xii)	Provide automatic and manual auxiliary feedwater (AFW) system initiation, and provide AFW system flow indication in the control room. (PWRs only)	II.E.1.2			

* Alphanumeric designations corresponding to related action plan items in NUREG-0718 and NUREG-0660, are provided herein for information only.

50.34(f) Item	Requirement	Action Plan Item*	N/A	Yes	No
(2)(xiii)	Provide pressurizer heater power supply and associated motive and control power interfaces sufficient to establish and maintain natural circulation in hot standby conditions with only onsite power available. (PWRs only)	II.E.3.1			
(2)(xiv)	Provide containment isolation systems that:	II.E.4.2			
	(A) Ensure all non-essential systems are isolated automatically by the containment isolation system				
	(B) For each non-essential penetration (except instrument lines) have two isolation barriers in series				
	(C) Do not result in reopening of the containment isolation valves on resetting of the isolation signal				
	(D) Utilize a containment set point pressure for initiating containment isolation as low as is compatible with normal operation				
	(E) Include automatic closing on a high radiation signal for all systems that provide a path to the environs				
(2)(xv)	Provide a capability for containment purging/venting designed to minimize the purging time consistent with as low as reasonably achievable (ALARA) principles for occupational exposure. Provide and demonstrate high assurance that the purge system will reliably isolate under accident conditions.	II.E.4.4			
(2)(xvi)	Establish a design criterion for the allowable number of actuation cycles of the ECCS and reactor protection system consistent with the expected occurrence rates of severe overcooling events (considering both anticipated transients and accidents). (B&W designs only)	II.E.5.1			
(2)(xvii)	Provide instrumentation to measure, record, and readout in the control room (A) containment pressure, (B) containment water level, (C) containment hydrogen concentration, (D) containment radiation intensity (high level), and (E) noble gas effluents at all potential, accident release points. Provide for continuous sampling of radioactive iodines and particulates in gaseous effluents from all potential accident release points, and for onsite capability to analyze and measure these samples.	II.F.1			
(2)(xviii)	Provide instruments that provide in the control room an unambiguous indication of inadequate core cooling, such as primary coolant saturation meters in PWRs, and a suitable combination of signals from indicators of coolant level in the reactor vessel and in-core thermocouples in PWRs and BWRs.	II.F.2			
(2)(xix)	Provide instrumentation adequate for monitoring plant conditions following an accident that includes core damage.	II.F.3			

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50.34(f) Item	Requirement	Action Plan Item*	N/A	Yes	No
(2)(xx)	Provide power supplies for pressurizer relief valves, block valves, and level indicators such that (A) level indicators are powered from vital buses; (B) motive and control power connections to the emergency power sources are through devices qualified in accordance with requirements applicable to systems important to safety, and (C) electric power is provided from emergency power sources. (PWRs only)	II.G.1			
(2)(xxi)	Design auxiliary heat removal systems such that necessary automatic and manual actions can be taken to ensure proper functioning when the main feedwater system is not operable. (BWRs only)	II.K.1.22			
(2)(xxii)	Perform a failure modes and effects analysis of the integrated control system (ICS) to include consideration of failures and effects of input and output signals to the ICS. (B&W designs only)	II.K.2.9			
(2)(xxiii)	Provide, as part of the reactor protection system, an anticipatory reactor trip that would be actuated on loss of main feedwater and on turbine trip. (B&W designs only)	II.K.2.10			
(2)(xxiv)	Provide the capability to record reactor vessel water level in one location on recorders that meet normal post-accident recording requirements. (BWRs only)	II.K.3.23			
(2)(xxv)	Provide an onsite Technical Support Center, an onsite Operational Support Center, and, for construction permit applications only, a near-site Emergency Operations Facility.	III.A.1.2			
(2)(xxvi)	Provide for leakage control and detection in the design of systems outside containment that contain (or might contain) accident source term[11] radioactive materials following an accident. Applicants shall submit a leakage control program, including an initial test program, a schedule for retesting these systems, and the actions to be taken for minimizing leakage from such systems. The goal is to minimize potential exposures to workers and the public, and to provide reasonable assurance that excessive leakage will not prevent the use of systems needed in an emergency.	III.D.1.1			
(2)(xxvii)	Provide for monitoring of in-plant radiation and airborne radioactivity as appropriate for a broad range of routine and accident conditions.	III.D.3.3			
(2) (xxviii)	Evaluate potential pathways for radioactivity and radiation that may lead to control room habitability problems under accident conditions resulting in an accident source term[11] release, and make necessary design provisions to preclude such problems.	III.D.3.4			

* Alphanumeric designations corresponding to related action plan items in NUREG-0718 and NUREG-0660, are provided herein for information only.

50.34(f) Item	Requirement	Action Plan Item*	N/A	Yes	No
(3) To satisfy the following requirements, the application shall provide sufficient information to demonstrate that the requirement has been met. This information is of the type customarily required to satisfy paragraph (a)(1) of this section or to address the applicant's technical qualifications and management structure and competence.					
(3)(i)	Provide administrative procedures for evaluating operating, design, and construction experience and for ensuring that applicable important industry experiences will be provided in a timely manner to those designing and constructing the plant.	I.C.5			
(3)(ii)	Ensure that the QA list required by Criterion II in Appendix B to 10 CFR Part 50 includes all SSC important to safety.	I.F.1			
(3)(iii)	Establish a QA program based on consideration of (A) ensuring independence of the organization performing checking functions from the organization responsible for performing the functions; (B) performing QA/quality control (QC) functions at construction sites to the maximum feasible extent; (C) including QA personnel in the documented review of and concurrence in quality related procedures associated with design, construction, and installation; (D) establishing criteria for determining QA programmatic requirements; (E) establishing qualification requirements for QA and QC personnel; (F) sizing the QA staff commensurate with its duties and responsibilities; (G) establishing procedures for maintenance of "as-built" documentation; and (H) providing a QA role in design and analysis activities.	I.F.2			
(3)(iv)	Provide one or more dedicated containment penetrations, equivalent in size to a single 3-foot-diameter opening, in order not to preclude future installation of systems to prevent containment failure, such as a filtered vented containment system.	II.B.8			
(3)(vi)	For plant designs with external hydrogen recombiners, provide redundant dedicated containment penetrations so that, assuming a single failure, the recombiner systems can be connected to the containment atmosphere.	II.E.4.1			
(3)(vii)	Provide a description of the management plan for design and construction activities, to include: (A) the organizational and management structure singularly responsible for direction of design and construction of the proposed plant; (B) technical resources director by the applicant; (C) details of the interaction of design and construction within the applicant's organization and the manner by which the applicant will ensure close integration of the architect engineer and the nuclear steam supply vendor; (D) proposed procedures for handling the transition to operation; (E) the degree of top-level management oversight and technical control to be exercised by the applicant during design and construction, including the preparation and implementation of procedures necessary to guide the effort.	II.J.3.1			