



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

Office of New Reactors
Environmental Report
Acceptance Review Tables
Revision 1

April 2016

Enclosed is the update to the Environmental Report Acceptance Review Tables. These tables are used by the staff when performing their acceptance review for environmental reports for new reactor applications in accordance with NRO-REG-100, Acceptance Review Process for Early Site Permit, Design Certification, and Combined License Applications. Applicants can use these tables as an aid in performing their own review of their application before submitting it to the NRC which should result in fewer acceptance review items being identified by the staff. These tables are only an aid and do not supersede the guidance documents referenced. If there is conflict between the guidance documents referenced and the tables follow the guidance document and contact the staff so the conflict can be corrected.

ML16085A019 (encl.)

Table of Contents

Appendix A – Accidents	2
Appendix B – Alternatives Analysis.....	1
Appendix C – Historic and Cultural Resources	1
Appendix D – Decommissioning.....	1
Appendix E – Aquatic Ecology	1
Appendix E – Terrestrial Ecology	1
Appendix F – Hydrology	1
Appendix G – Land Use/Transmission Line.....	1
Appendix H – Meteorology	1
Appendix I – Need for Power and Benefit-Cost Balance	1
Appendix J – Radiological Health	1
Appendix J 1 – Non-Radiological Human Health	1
Appendix K – Site and Technical Overview.....	1
Appendix L – Socioeconomics and Environmental Justice	1
Appendix M – Greenhouse Gas and Climate Change	1
Appendix N – Transportation	1
Appendix O – Uranium Fuel Cycle	1
Appendix P – Cumulative	1

**Table 1. Environmental Report Acceptance Review
Appendix A – Accidents**

The purpose of this table is to provide the NRC with a deliverable for the Environmental Report Acceptance Review that will assist them in implementing Office Instruction NRO-REG-100. The PNNL version of Table 1 varies somewhat from Table 1 of Attachment D found in the office instruction. This table may be used either in addition to the Sufficiency Review Checklist or in lieu of the checklist. For all the items where there is a “1” listed in the priority column, the accident reviewer is the primary reviewer. In addition to the primary review responsibilities, the accident reviewer should also be looking at the ESRP sections shown in the “Review Interface” portion of each primary ESRP (listed as a “2” in the priority column).

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
1	Accidents	Insert Team member name(s)	1	Environmental Standard Review Plan (ESRP) 7.1	Is the exclusion area boundary (EAB) definition consistent throughout the environmental report (ER) and Site Safety Analysis Report (SSAR) or Final Safety Analysis Report (FSAR)?				
2	Accidents		1	ESRP 7.1	Is the low-population zone (LPZ) definition consistent throughout the ER and SSAR/FSAR?				
3	Accidents		1	ESRP 7.1	Are the meteorological data used to calculate normalized concentrations (χ/Qs) for design-basis accident (DBA) analyses the same as the data used to calculate χ/Q for routine releases?				
4	Accidents		1	ESRP 7.1 Regulatory Guide (RG) 1.145	Are the χ/Q values used for DBA analyses for representative (50%) meteorological conditions? If so, were the procedures used to calculate the χ/Q values consistent with NRC guidance?				
5	Accidents		1	ESRP 7.1	Have the meteorological data on which the χ/Q values are based been provided to the U.S. Nuclear Regulatory Commission (NRC)?				
6	Accidents		1	ESRP 7.1	Does the ER list the name for any computer code used to calculate the χ/Qs used for DBAs?				
7	Accidents		1	ESRP 7.1	Does the ER contain a list of DBAs, and are they the same as the DBAs in the SSAR/FSAR?				

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8	Accidents		1	ESRP 7.1	If the reactor design is certified or undergoing certification, are the DBAs the same set covered in the design control document (DCD) or FSAR? If the reactor design is not certified or undergoing certification, are the DBAs listed in ESRP 7.1 Appendix A included in the ER’s DBA analysis?				
9	Accidents		1	ESRP 7.1 and SRP 15.0.3, RG 1.183	Are the DBA doses calculated for the reactor design-power level plus a margin for uncertainty (e.g, design power + 2%)?				
10	Accidents		1	ESRP 7.1	Are isotopic source terms provided for each DBA?				
11	Accidents			ESRP 7.1 10 CFR 50.34(a)(1) RG 1.183	Do the isotopic source terms include the source term for the worst 2-hour period?				
12	Accidents		1	ESRP 7.1 RG 1.183	Do the DBA doses appropriately account for changes in breathing rates?				
13	Accidents		1	ESRP 7.1	Does the ER appropriately reference a document that describes each DBA and underlying assumptions? If not, does the ER provide a description of each DBA?				
14	Accidents		1	ESRP 7.1 10 CFR 50.34(a)(1) RG 1.183	1. Are EAB doses calculated for the 2-hour period that gives the highest dose? 2. Is the 2-hour period identified?				
15	Accidents		1	ESRP 7.1 and SRP 15.0.3 10 CFR 50.34(a)(1), 52.17(a)(1)(ix) or 52.79(a)(1)(vi)	Are EAB DBA doses less than dose limits and criteria set for safety reviews?				

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16	Accidents		1	ESRP 7.1 RGs 1.145 and 1.183	Are DBA LPZ doses calculated for four time periods as indicated in ESRP 7.1 and RGs 1.3, 1.4, 1.145, etc.?				
17	Accidents		1	ESRP 7.1	Are the LPZ γ /Qs calculated consistently with NRC guidance?				
18	Accidents		1	ESRP 7.1 and SRP 15.0.3 10 CFR 50.34(a)(1), 52.17(a)(1)(ix) or 52.79(a)(1)(vi)	Are LPZ DBA doses less than dose limits and criteria set for safety reviews?				
19	Accidents		1	ESRP 7.2	Does the ER contain a site-specific evaluation the potential impacts of severe accidents based results on a recognized tool such as the MACCS2 code? If so, list the name of the code.				
21	Accidents		1, 2	ESRP 7.2	What meteorological data were used in the evaluation? (Check with meteorology reviewer)				
22	Accidents		1, 2	ESRP 7.2	1. What population data were used in the evaluation? 2. Are the data consistent with that presented in the demographic discussion? 3. Are population projections based on the most recent census and appropriate projection techniques? (Check with socioeconomic project reviewer)				
23	Accidents		1, 2	ESRP 7.2	What land use data were used in the evaluation? Were they adjusted for potential changes in land use? (Check with land use project reviewer)				
24	Accidents		1, 2	ESRP 7.2	Does the ER contain a list of major surface water users within 50 miles of the site, including public water supplies and major industrial and agricultural users? (Check with hydrology project reviewer)				

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25	Accidents		1	ESRP 7.2	Does the ER contain or refer to a list the postulated severe accidents, their descriptions, and their respective core damage frequencies? If so, is the list consistent with accidents considered in a DCD or FSAR for the reactor type?				
26	Accidents		1	ESRP 7.2	Has the applicant provided electronic copies of the input to and output from the computer code?				
27	Accidents		1	ESRP 7.2	Does the severe accident analysis in the ER consider the atmospheric, surface water, and groundwater pathways?				
28	Accidents		1	ESRP 7.2	Does the severe accident analysis include output for socioeconomic, individual (i.e., Safety Goals) and population health effects?				
29	Accidents		1	ESRP 7.2	Are these effects adequately reflected in the ER in terms of risk?				
30	Accidents		1	ESRP 7.2	If the application references a reactor design other than a certified design, does the ER or FSAR list or refer to a list of the dominant severe accident sequences?				
31	Accidents		1	ESRP 7.2	Does the ER provide a description of any emergency response scenarios, including evacuation, sheltering, and dose-dependent relocation assumptions used in the analysis?				
32	Accidents		1	ESRP 7.2	Does the ER provide a description of the comparison of the core damage frequencies estimated for the reactor to those for current-generation reactors and the comparison of the population dose risks to the mean and median values for current-generation reactors undergoing license renewal?				

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33	Accidents		1	ESRP 7.3	Does the ER (or SSAR/FSAR or DCD) contain a list of leading contributors to 1. core damage frequency 2. large release frequency and 3. dose consequences with and without mitigation?				
34	Accidents		1	ESRP 7.3	Does the ER (or SSAR/FSAR) contain a description of the method, rationale, or process used to identify, screen, and select design alternatives and procedural modifications?				
35	Accidents		1	ESRP 7.3	Does the ER or other document in the applicant contain the estimated cost, risk reduction, and value impact ratios for the selected severe accident mitigation alternatives (SAMAs) along with the underlying assumptions?				
36	Accidents		1	ESRP 7.3	Does the ER or other document in the application contain a list of SAMAs that have been or will be implemented to prevent or mitigate the impacts from severe accidents or to reduce the risk of a severe accident or other statement related to the implementation of SAMAs?				
37	Accidents		1	ESRP 7.3	Does the ER provide a description of the methodology, process, and rationale used to further analyze any selected SAMAs to determine the amount of risk reduction that the SAMA could reasonably achieve				
38	Accidents		1	Cumulative Impacts (ISG-26)	Has the applicant considered activities of other agencies that have occurred or will occur in the region that may contribute to a cumulative impact on radiological health?				
39	Accidents		1	Cumulative Impacts (ISG-26)	Has the applicant identified projects in the region that may contribute to a cumulative impact on radiological health?				

**Table 1. Environmental Report Acceptance Review
Appendix B – Alternatives Analysis**

The purpose of this table is to provide the NRC with a deliverable for the Environmental Report Acceptance Review that will assist them in implementing Office Instruction NRO-REG-100. The PNNL version of Table 1 varies somewhat from Table 1 of Attachment D found in the office instruction. This table may be used either in addition to the Sufficiency Review Checklist or in lieu of the checklist. For all the items where there is a “1” listed in the priority column, the accident reviewer is the primary reviewer. In addition to the primary review responsibilities, the accident reviewer should also be looking at the ESRP sections shown in the “Review Interface” portion of each primary ESRP (listed as a “2” in the priority column).

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes:
1	Alternatives Analysis	Insert Team member name(s)	1	ESRP 9.1	Discussion of the no-action alternative.				
2	Alternatives Analysis		2	ESRP 9.2.1	A list of the facilities in the relevant service area scheduled for retirement during the period extending from date of application through the sixth year of commercial operation of the proposed project, including existing nuclear power facilities within the relevant region that are near the end of their license and are candidates for license renewal. Power facilities available for reactivation or uprating should also be included.				
3	Alternatives Analysis		2	ESRP 9.2.1	The potential for energy conservation within the relevant service area; this must be in excess of energy efficiency already accounted for in power planning estimates				

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4	Alternatives Analysis		1	ESRP 9.2.2	1. Is the following material found and cited in the Application? For alternatives that have not yet achieved commercial acceptance, but may satisfy a test of reasonably foreseeable in the timeline of consideration, the U.S. Department of Energy (DOE) research, development, and demonstration/commercialization schedules and projected capability as a source of central station power.				
5	Alternatives Analysis		1	ESRP 9.2.2, ISG-026, Att. 6	For nonrenewable fuels (coal, natural gas, and petroleum fuels), the projected growth in that fuel’s use in the region of interest, the typical capacity factor, rate of consumption estimates, potential environmental restrictions and impacts, and emissions and definition of U.S. national policy (if any) with respect to new uses of these fuels.				
6	Alternatives Analysis		1	ESRP 9.2.2, ISG-026, Att. 6	For renewable fuels (e.g., wind, geothermal, hydroelectric, wood waste and municipal solid waste, energy crops, and solar), availability to the applicant, the projected growth in that fuel’s use in the region of interest, the typical capacity factor, quantities needed, potential environmental restrictions, amount of land that would be occupied, amount of the fuel available, and U.S. national policy (if any) with respect to new uses of these fuels.				
7	Alternatives Analysis		1	ISG-026, Att. 6	For renewable fuels with a capacity factor significantly lower than that of the proposed project (e.g., wind, solar), whether the alternative could be competitive if a form of energy storage or back-up power is included. The feasibility and environmental impacts of energy storage or back-up power are addressed.				
8	Alternatives Analysis		1	ISG-026, Att. 6	At least one combination of available renewable and non-renewable energy sources, with priority given to those sources with the least environmental impacts.				

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9	Alternatives Analysis		2	ESRP 9.2.3	1. Is the following material found and cited in the Application? When technically feasible and environmentally preferable alternatives are identified, estimated decommissioning cost for the proposed project and for each such alternative ^(a) .				
10	Alternatives Analysis		1	ESRP 9.2.3	When technically feasible and environmentally preferable alternatives are identified, the fixed charge rate for the utility or consortium of utilities ^(a) .				
11	Alternatives Analysis		1	ESRP 9.2.3	When technically feasible and environmentally preferable alternatives are identified, fuel cost estimates at time of application for the proposed project and for each such alternative ^(a) .				
12	Alternatives Analysis		1	ESRP 9.2.3	When technically feasible and environmentally preferable alternatives are identified, the operation and maintenance cost estimates (fixed component and variable component) at time of application for the proposed project and each such alternative ^(b) .				
13	Alternatives Analysis		1	ESRP 9.2.3	When technically feasible and environmentally preferable alternatives are identified, the escalation rates from date of application through facility lifetime (30-year life) for the components of operation and maintenance and fuel for the proposed project and each such alternative ^(b) .				
14	Alternatives Analysis		1	ESRP 9.2.3	When technically feasible and environmentally preferable alternatives are identified, the discount rate for the proposed project and each such alternative ^(b) .				
15	Alternatives Analysis		1	ESRP 9.2.3	A comparison of the environmental impacts of construction and operation of the proposed action and the technically feasible alternative energy sources, including the determination whether any alternative is environmentally preferable to the proposed action.				
16	Alternatives Analysis		1	ESRP 9.3	The objectives of the alternative site selection process.				
17	Alternatives Analysis		1	ESRP 9.3	Siting constraints and limitations (e.g., rules, regulations, and laws).				

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18	Alternatives Analysis		1	ESRP 9.3	The selection procedures for the region of interest (ROI), candidate areas, potential sites, candidate sites, and proposed site.				
19	Alternatives Analysis		1	ESRP 9.3	The basis for establishing the geographical scope of the ROI.				
20	Alternatives Analysis		1	ESRP 9.3	The factors considered at each level of the selection process, parameters by which these factors were measured, and criteria used to define levels of quality (e.g., numerical limits or decision standards).				
21	Alternatives Analysis		1	ESRP 9.3	The criteria used to screen potential sites to arrive at candidate sites.				
22	Alternatives Analysis		1	ESRP 9.3	The methodologies used in the candidate site comparison process, including (when used) factors such as importance factors, preference functions, utility functions, weighing factors, ranking scales, scoring schemes, rating systems, and sensitivity analyses.				

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23	Alternatives Analysis		1	ESRP 9.3 10 CFR 100.21(h)	A description of the ROI selected by the applicant, including the following: 1. major centers of population 2. areas predicted to be deficient in power 3. water bodies available for cooling 4. railroads, highways, and waterways (existing and planned) 5. topographic features 6. major land-use classifications (e.g., residential and agricultural) and areas reserved for specific uses 7. location and description of existing and planned primary electrical generating stations 8. existing and planned transmission network 9. transmission interconnections with other utilities 10. natural and man-made features (e.g., zones of seismic activity, unusual geologic features, military installations) constituting potential hazards to construction or operation of a nuclear power facility.				
24	Alternatives Analysis		1	ESRP 9.3	Descriptions of the following: 1. candidate areas 2. potential sites 3. candidate sites.				
25	Alternatives Analysis		1	ESRP 9.3	Descriptions of how the site-selection process was used to identify and select the ROI, candidate areas, potential sites, candidate sites, and the proposed site.				
26	Alternatives Analysis		1	ESRP 9.3	Data sources used in the site-selection process, including results of site-specific field investigations.				
27	Alternatives Analysis		1	ISG-026, Att. 6	For each alternative site, has sufficient information been provided to support a determination that the site could be used to build and operate the proposed plant. For example, as stated in RG 4.7, there should be reasonable assurance that the applicant could obtain the necessary water use permits for the proposed project at each alternative site.				

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28	Alternatives Analysis		1	ISG-026, Att. 6	1. Is the following material found and cited in the Application? If the applicant has submitted a permit application to the U.S. Army Corps of Engineers (USACE), including an evaluation of the least environmentally damaging practicable alternative, ensure that the data and supporting information in that document is not inconsistent with the information the applicant has provided to the NRC staff in the ER and supporting documents.				
29	Alternatives Analysis		1	ISG-026, Att. 6	For each alternative site, a listing, preferably in tabular form, of other past, present, and reasonably foreseeable actions that could affect the same environmental resources that would be affected by the construction and operation of the proposed plant at each alternative site.				
30	Alternatives Analysis		1	ESRP 9.3	A comparison of the cumulative environmental impacts of construction and operation of the proposed action at the proposed site and at each alternative site, including the determination whether any alternative is environmentally preferable to the proposed site.				
31	Alternatives Analysis		1	ESRP 9.3, ISG-026, Att. 6	Costs ^(c) and institutional constraints for any site identified by the applicant as environmentally preferable, along with the determination whether the alternative site is obviously superior to the proposed site.				

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32	Alternatives Analysis		1	9.4.1	<p>The proposed heat dissipation system for each potential alternative, as follows, is necessary:</p> <ul style="list-style-type: none"> • land-use requirements • water-use requirements • operating and maintenance experience for similar units • capital, maintenance, and operating costs^(d) • effect on generating efficiency • predicted thermal and physical effects, e.g., thermal plume and scouring • predicted atmospheric effects, e.g., fogging, icing, and drift • predicted operating noise levels • predicted aesthetic effect, e.g., visual plumes • predicted recreational benefits. 				
33	Alternatives Analysis		1	9.4.2	<p>For intake systems, the following information is required:</p> <ul style="list-style-type: none"> • sketches or preliminary designs and operational characteristics of alternative intake systems, showing the intake design and its relationship to water surface, bottom geometry, shoreline, and discharge structure • alternative pumping facilities, if proposed • alternative locations of the proposed intake system and pumping facility on the same waterbody • alternative procedures and schedules for intake defouling, including any use of defouling chemicals • descriptions and operational characteristics of any alternative trash racks, traveling screens, trash baskets, or fish return systems • predicted physical impacts from hydrologic alternatives and impacts to aquatic ecosystems, including entrapment, impingement, and entrainment, for each alternative intake system • capital, maintenance, and operating costs for each alternative intake system and costs associated with system adaptation to the proposed site.^(d) 				

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34	Alternatives Analysis		1	9.4.2	<p>1. Is the following material found and cited in the Application?</p> <p>For discharge systems, the following information is required:</p> <ul style="list-style-type: none"> sketches or preliminary designs and operational characteristics of alternative discharge systems showing the discharge design, its location with respect to the receiving water body, and its relationship to water surface, bottom geometry, intake structure, and shoreline description of alternative discharge lines (or canals) from the heat dissipation system to the receiving water body description of alternative locations of the proposed discharge system on the same water body estimated physical impacts from hydrologic alterations and impacts to aquatic biota for each alternative discharge system capital, maintenance, and operating costs for each alternative discharge system and costs associated with system adaptation to the proposed site. ^(d) 				
35	Alternatives Analysis		1	9.4.2	<p>For the water supply, the following information:</p> <ul style="list-style-type: none"> description of potential alternative sources of water and their availability, including location of water supply source with respect to the facility site economic and environmental cost data for water delivered from each alternative source. ^(d) 				
36	Alternatives Analysis		1	9.4.2	<p>For water treatment, the following information is required:</p> <ul style="list-style-type: none"> description and purpose of alternative water treatment systems for the circulating water system and the facility (service) water system chemicals and additives (or mechanical treatment) to be used in each alternative water treatment system operating cycles for each alternative water treatment system capital, maintenance, and operating costs for each alternative water treatment system. ^(d) 				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
37	Alternatives Analysis		1	9.4.2	1. Is the following material found and cited in the Application? Capital, maintenance, and operating costs for the proposed intake system, discharge system, and water treatment system, and water costs for the proposed water supply. ^(d)				
<p>(a) Cost-related data for the energy alternatives is only expected if the applicant has identified an environmentally preferable energy alternative. (ISG-026, Att. 6)</p> <p>(b) Cost-related data for the energy alternatives is only expected if the applicant has identified an environmentally preferable energy alternative. (ISG-026, Att. 6)</p> <p>(c) Cost-related data for an alternative site is only expected if the applicant has identified that site as environmentally preferable. (ISG-026, Att. 6)</p> <p>(d) Cost-related data for design alternatives (and the proposed design) is only expected if the applicant has identified an environmentally preferable design alternative.</p>									

**Table 1. Environmental Report Acceptance Review
Appendix C – Historic and Cultural Resources**

The purpose of this table is to provide the NRC with a deliverable for the Environmental Report Acceptance Review that will assist them in implementing Office Instruction NRO-REG-100. The PNNL version of Table 1 varies somewhat from Table 1 of Attachment D found in the office instruction. This table may be used either in addition to the Sufficiency Review Checklist or in lieu of the checklist. For all the items where there is a “1” listed in the priority column, the accident reviewer is the primary reviewer. In addition to the primary review responsibilities, the accident reviewer should also be looking at the ESRP sections shown in the “Review Interface” portion of each primary ESRP (listed as a “2” in the priority column).

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
1	Historic and Cultural Resources	Insert Team member name(s)	1	36 CFR 800	A definition of the area of potential effects (APE), a description of cultural resources surveys and cultural resources located with the APE as well as the results of NRHP evaluations, Correspondence with the State Historic Preservation Office (SHPO), tribes and other interested parties, List of measures to avoid or resolve adverse effects to historic properties. Identification, avoidance and/or mitigation process prior to any ground disturbance activities associated with preconstruction or construction activities. NRC expects applicants to provide a plan to identify and protect historic resources during preconstruction activities and to follow that plan during preconstruction activities. NRC notes that Section 110(k) of the National Historic Preservation Act (NHPA); 16 U.S. Code Section 470h-2(k)) prohibits applicants for Federal licenses or permits from intentionally destroying historic properties that may be protected under the NHPA.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
2	Historic and Cultural Resources		1	ESRP 2.5.3, 36CFR 800, NPS bulletin 24	<p>A description of the Area of Potential Effect (APE) and the historic and cultural resources within the APE, e.g direct and indirect APE. APE may include visual, submerged (if dredging involved), onsite, offsite (transmission lines) redact any information</p> <p>a detailed description of any archaeological or historical surveys of the proposed site, transmission line routes, or access corridors, including the following - the physical extent of the survey. If the entire site was not surveyed, the basis for selecting the area to be surveyed is needed.</p> <ul style="list-style-type: none"> - a brief description of the survey techniques used and the reason for selecting the survey techniques used - the qualifications of the surveyors - the findings of the survey in sufficient detail to permit a subsequent independent assessment of the impact of the proposed project on archaeological and historic resources 				
3	Historic and Cultural Resources		1	ESRP 2.5.3 36CFR 800 40CFR1508.8 30 CFR 63, NPS bulletin 15	<p>A description of properties within the proposed site or within proposed transmission line corridors, access corridors, and offsite areas (i.e. APE) that are in or eligible for inclusion in the <i>National Register</i> or are included in State or local registers or inventories of historic and archaeological resources (from the ER and consultation with Federal, State, regional, local, and affected Native American tribal agencies). Description of additional cultural resources and their determination of importance under the National Environmental Policy Act (NEPA).</p>				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
4	Historic and Cultural Resources		1	36 CFR 800 ESRP 2.5.3 30 CFR 63	An appraisal of the overall cultural resources sensitivity and potential for cultural resources to be present within the APE based on models of prehistoric and historic occupation and the presence of National Register eligible of historic properties within 16 km (10 mi) of the proposed site or within 2 km (1.2 mi) of proposed transmission line routes, access corridors, and offsite areas that are in or have been determined eligible for inclusion in the <i>National Register</i> or are included in State or local registers or inventories of historic and cultural resources (from the ER and consultation with Federal, State, regional, local, and affected Native American tribal agencies).				
5	Historic and Cultural Resources		1	ESRP 2.5.3 36CFR800	A summary of land-use data as needed to describe archaeological sites and natural landmarks within and surrounding the APE, beginning with the earliest recorded prehistoric settlement.				
6	Historic and Cultural Resources		1	36CFR800 30 CFR 63 NPS bulletin 15	A description of the cultural history of the region around the proposed plant.				
7	Historic and Cultural Resources		1	ESRP 4.6 and 4.1.3	Provide a list of applicant commitments and staff evaluations of practices to limit adverse environmental impacts of construction, including any actions required to avoid or mitigate any adverse effects and procedures for recovery of data that the applicant must undertake.				
8	Historic and Cultural Resources		1	ESRP 2.5.3 and 36CFR 800	the comments of any organizations contacted to locate and assess archaeological and historic resources located on or near the proposed station site and a description of correspondence made with Federal and state agencies, Indian tribes, and interested parties.				
9	Historic and Cultural Resources		2	ESRP 2.5.3	There are no technical deficiencies in support of cultural resources for the sections mentioned in Review Interfaces in ESRP 2.5.3.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
10	Historic and Cultural Resources		1	ESRP 4.1.3 and 36CFR 800	a description and <i>National Register</i> evaluation of historic properties within the site boundary, transmission or access corridors, or offsite areas (from ESRP 2.5.3) (i.e. APE) ` a description and <i>National Register</i> evaluation of historic properties that are within 15 km (9 mi) of the proposed site or within 2 km (1.2 mi) of proposed transmission corridors, access corridors, and offsite areas (from ESRP 2.5.3)				
11	Historic and Cultural Resources		1	ESRP 4.1.3 36CFR800	An assessment of the impacts to important historic and cultural resources as well as of the adverse effects that could occur to NRHP-eligible resources from the proposed construction activities.				
12	Historic and Cultural Resources		1	ESRP 4.1.3 and 36CFR 800). the State Historic Preservation Officer’s (SHPO’s) comments on the impact of the proposed project on important historic properties (from consultation with State agencies and Native American tribes) as well as any Interested Parties				
13	Historic and Cultural Resources		1	ESRP 4.1.3 36CFR800	State laws and applicant’s plans for historic preservation and human remains.				
14	Historic and Cultural Resources		1	ESRP 4.1.3 43CFR10	If located on Federal land, the applicant’s procedures for identifying the potential for human remains to occur in the project and for complying with provisions of the Native American Graves Protection and Repatriation Act (NAGPRA) in the event of an inadvertent discovery.				
15	Historic and Cultural Resources		1	ESRP 4.1.3 36CFR800	The proposed avoidance measures and procedures and/or plans in place to avoid impacts to important historic and cultural resources during construction, and/or proposed mitigation measures to resolve adverse effects including if the applicant is a Federal Agency an MOA if one has been developed because adverse effects will occur..				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
16	Historic and Cultural Resources		2	ESRP 4.1.3	There are no technical deficiencies in support of historic and cultural resources for the sections mentioned in Review Interfaces in ESRP 4.1.3.				
17	Historic and Cultural Resources		1	ESRP 5.1.3 36CFR800	a description of historic and archaeological resources within the site boundary, transmission or access corridors, or offsite areas (from ESRP 2.5.3) ` a description of historic or archaeological resources that are within 16 km (10 mi) of the proposed site or within 2 km (1.2 mi) of proposed transmission corridors, access corridors, or offsite areas (from ESRP 2.5.3) ` the State Historic Preservation				
18	Historic and Cultural Resources		1	ESRP 5.1.3 36CFR800	An assessment of the impacts that could occur to important historic and cultural resources as well as of the adverse effects that could occur to NRHP-eligible resources from the proposed operation activities.				
19	Historic and Cultural Resources		1	ESRP 5.1.3 36CFR800	The proposed avoidance measures and procedures and/or plans in place to avoid impacts to important historic and cultural resources during operations, and/or proposed mitigation measures to resolve adverse effects to historic properties. Including a list of applicant commitments and staff evaluations of practices to limit adverse impacts of operation, including (1) actions required to avoid or mitigate adverse impacts, and (2) procedures for protection of significant historic properties. .				
20	Historic and Cultural Resources		2	ESRP 5.1.3	There are no technical deficiencies in support of historic and cultural resources for the sections mentioned in Review Interfaces in ESRP 5.1.3.				
21	Historic and Cultural Resources		1	ESRP 9.3 ISG 26	Reconnaissance level information on the presence or absence of historic properties is provided for all alternative sites.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
22	Historic and Cultural Resources		1	40CFR1508 ISG-26	Cumulative effects have been addressed.				
23	Historic and Cultural Resources		1	Alternative Analysis (ESRP 9.3)	Has the applicant provided an analysis of impacts to historic and cultural resources at the alternative sites?				

**Table 1. Environmental Report Acceptance Review
Appendix D – Decommissioning**

The purpose of this table is to provide the NRC with a deliverable for the Environmental Report Acceptance Review that will assist them in implementing Office Instruction NRO-REG-100. The PNNL version of Table 1 varies somewhat from Table 1 of Attachment D found in the office instruction. This table may be used either in addition to the Sufficiency Review Checklist or in lieu of the checklist. For all the items where there is a “1” listed in the priority column, the accident reviewer is the primary reviewer. In addition to the primary review responsibilities, the accident reviewer should also be looking at the ESRP sections shown in the “Review Interface” portion of each primary ESRP (listed as a “2” in the priority column).

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or where information was found and any other pertinent information.
1	Decommissioning	Insert Team member name	1	ESRP 5.9	As specified in 10 CFR 50.75(b)(1) and required by 10 CFR 50.33(k) for a OL or a COL, a report containing a certification that financial assurance for radiological decommissioning will be provided.				
2	Decommissioning		2	ESRP 5.9	There are no technical deficiencies in support of decommissioning for the sections mentioned in Review Interfaces in ESRP 5.9.				
3	Decommissioning		1	Cumulative Impacts (ISG-26 cumulative attachment	Has the applicant identified activities of other agencies that have occurred or will occur in the region that may contribute to a cumulative impact on decommissioning?				
4	Decommissioning		1	Cumulative Impacts ISG-26 Cumulative attachment	Has the applicant identified projects in the region that may contribute to a cumulative impact on decommissioning?				

**Table 1. Environmental Report Acceptance Review
Appendix E – Aquatic Ecology**

The purpose of this table is to provide the NRC with a deliverable for the Environmental Report Acceptance Review that will assist them in implementing Office Instruction NRO-REG-100. The PNNL version of Table 1 varies somewhat from Table 1 of Attachment D found in the office instruction. This table may be used either in addition to the Sufficiency Review Checklist or in lieu of the checklist. For all the items where there is a “1” listed in the priority column, the accident reviewer is the primary reviewer. In addition to the primary review responsibilities, the accident reviewer should also be looking at the ESRP sections shown in the “Review Interface” portion of each primary ESRP (listed as a “2” in the priority column).

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or where information was found and any other pertinent information.
1	Ecology – Aquatic	Insert Team member name	1	ESRP 2.4.2	1. Is the following material found and cited in the Application? Is the available site-specific data adequate, accurate, and complete?				
2	Ecology – Aquatic		1	RG 4.2	1. Is the following material found and cited in the Application? Has the applicant included at least one year’s worth of baseline aquatic monitoring data of the higher trophic level organisms to characterize adequately the aquatic environment and to identify important species? If the applicant is relying on historical data, is there adequate justification for why that data are appropriate?				
3	Ecology – Aquatic		1	ESRP 2.4.2	1. Is the following material found and cited in the Application? Has the applicant identified any onsite waterbodies, streams, or wetland areas? Is sampling data available for these water features? Has the applicant determined if these waterbodies contain any “important” species?				
4	Ecology – Aquatic		1	RG 4.2	1. Is the following material found and cited in the Application? Has the applicant identified the species and habitats that will be considered “important” ecological resources of the site, vicinity, transmission corridors, and offsite areas for evaluation of potential impacts on them?				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or where information was found and any other pertinent information.
5	Ecology – Aquatic		1	ESRP 2.4.2	Did the applicant include a map that identifies “important” aquatic habitats or bodies of water on and in the vicinity of the site?				
6	Ecology – Aquatic		1	ESRP 2.4.2	Did the applicant describe any “important” species and their spatial and temporal distributions on and in the vicinity of the site (discharge area and receiving waterbody), including (to the extent that power plant construction or operation is expected to affect these parameters) their relative abundance, critical habitat, and their life histories: critical life stages, spawning areas, nursery grounds, food habits, feeding areas, wintering areas, and migration areas?				
7	Ecology – Aquatic		1	ESRP 2.4.2	Has the applicant consulted with local offices of the appropriate Federal, State, regional, local, and affected Native American tribal agencies to determine the presence of endangered or threatened aquatic species or the location of Essential Fish Habitat in proximity to the plant? Determine when the last time there was agency consultation.				
8				ESRP 2.4.2	Did the applicant provide a list of the endangered and threatened aquatic species that are known to be present or that could potentially occur onsite and identification of their other locations and critical habitats within the region? Did they identify specific habitat requirements (e.g., thermal tolerance ranges), community interrelationships, and relative abundance?				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or where information was found and any other pertinent information.
9				Magnuson Stevens Fish Conservation Act (in ESRPs) ESRP 5.3.1.2 (rev 1)	Did the applicant provide information related to the proximity to Essential Fish Habitat (EFH) and the species for which it is designated (including a description of the waters, substrate, necessary habitat and life cycle of the species)?				
10	Ecology – Aquatic		1	ESRP 2.4.2	Has the applicant identified the location and value of commercial, subsistence and/or recreational fisheries, and the historic and current seasonal harvest by species?				
11	Ecology – Aquatic		1	ESRP 2.4.2	Did the applicant identify and describe 1. species composition 2. the spatial and temporal distribution 3. abundance 4. other structural and functional attributes of biotic assemblages that could be impacted by the proposed action.				
12	Ecology – Aquatic		1	Marine Sanctuaries Act	Did the applicant identify and describe the location of wildlife sanctuaries, including marine sanctuaries and natural areas that might be affected by the proposed action?				
13	Ecology – Aquatic		1	ESRP 2.4.2	Does the applicant provide information on key indicator organisms that are particularly vulnerable to impacts from plant construction or operation?				
14	Ecology – Aquatic		1	ESRP 2.4.2	Did the applicant list any nuisance or invasive species of concern (e.g., <i>Corbicula</i> sp. or <i>Mytilus</i> sp.) or other species that cause environmental damage or are capable of blocking or bio-fouling the cooling water intake) or species that could be considered as disease vectors or pests				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or where information was found and any other pertinent information.
15	Ecology – Aquatic		1	ESRP 2.4.2	Did the applicant describe the natural and anthropogenic effects (e.g., flooding, impoundment, fishing, changes to water quality), preexisting environmental stresses (e.g., infestations, catastrophes), and the current ecological conditions that are indicative of such stresses?				
16	Ecology – Aquatic		1	RG 4.2	Did the applicant describe the location of any ecological or biological studies of the site or its environs that are recent or currently in progress?	In RG 4.2, R2			
17	Ecology – Aquatic		1	ESRP 4.3.2	Has the applicant identified the construction activities that could affect “important” aquatic species and habitats of the site and vicinity, transmission corridors, and offsite areas?				
18	Ecology – Aquatic		1	ESRP 4.3.2	Is there a map available that shows the areal extent and location of the construction activities, along with important aquatic features (e.g., estuaries, rivers, reservoirs, lakes, wetlands, ponds, streams)? Does this map show an overlay of plant facilities for reference?				
19	Ecology – Aquatic		1	ESRP 4.3.2	Is there information on the proposed schedule of construction activities as well as timing and duration of the activities?				
20	Ecology – Aquatic		1	ESRP 4.3.2	Is there information about the construction practices to control or minimize impacts to aquatic ecosystems from clearing activities, noise, siltation, and dust?				
21	Ecology – Aquatic		1	ESRP 4.3.2	Are there plans for limiting impacts during construction (e.g., the maintenance of siltation ponds or catchment basins)?				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or where information was found and any other pertinent information.
22	Ecology – Aquatic		1	ESRP 4.3.2	<p>Is there information available that can be used to determine how construction activities will impact “important” species and their habitats (e.g., those resulting from scouring and siltation, dredging and soil disposal, and interference with shoreline processes)?</p> <p>Is there information that can be used to estimate the magnitude and duration of such impacts? Consider potential disturbances of benthic areas by the following construction activities:</p> <ol style="list-style-type: none"> 1. placement of intake and discharge structures 2. channel modifications for navigation or flow control 3. placement and removal of cofferdams 4. construction of bulkheads, piers, jetties, basins, and storm sewers 5. direct dredging, including the area that may be affected by resulting siltation and turbidity 6. percent (or the width and depth) of the waterbody cross section that might be obstructed by construction activity at any time 7. time and duration of such obstruction 8. potential changes to water quality caused by exposure of substrate to contaminants during construction (e.g., dredging for intake channels, cofferdam construction). 				
23	Ecology – Aquatic		1	ESRP 4.3.2	Is there information available that can be used to assess the potential for reversibility of impacts and environmental improvement following completion of construction?				
24	Ecology – Aquatic		1	ESRP 4.3.2	Have recognized best management practices (BMPs) been cited as means for limiting impacts from construction activities?				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or where information was found and any other pertinent information.
25	Ecology – Aquatic		1	ESRP 4.3.2	Are there plans for mitigation of a predicted impact using appropriate measures, which could include alternative placement of structures, alternative schedules, or alternative construction practices?				
26	Ecology – Aquatic		1	ESRP 4.3.2 and 4.6	Have any construction activities been evaluated that will result in adverse impacts that cannot be mitigated? Alternatives to mitigate adverse impacts could include using a fish hatchery or habitat restoration to increase natural fish production.				
27	Ecology – Aquatic		1	ESRP 4.3.2	If dredging is involved, are there plans for disposal of dredged material and placement of fill material?				
28	Ecology – Aquatic		1	ESRP 4.3.2	Are there plans for dewatering surface waters and/or wetlands?				
29	Ecology – Aquatic		1	ESRP 4.3.2	If a cooling pond or retention basin is at the site or being considered in future construction, is there information about the aquatic species expected to become established in the cooling ponds?				
30	Ecology – Aquatic			ESRP 4.3.2	Water bodies and wetlands crossed or spanned that are expected to have tower foundations located within them and the location and areal limits of the construction activities that would affect the aquatic habitat				
31	Ecology – Aquatic			ESRP 4.3.2	Clearing methods, erosion control methods and other construction practices that control or minimize impacts to waterbodies that are specific to the proposed transmission system				
32	Ecology – Aquatic			ESRP 4.3.2	A description of the magnitude and schedule of construction activities that are expected to affect “important” or federally listed aquatic species and critical habitat				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or where information was found and any other pertinent information.
33	Ecology – Aquatic		1	ESRP 4.3.2	If the applicant wishes to accelerate the start of construction, then determine if the applicant has included an initial evaluation in the ER of environmental impacts based on an analysis of at least 6 months of field data related to the proposed facility and suitable projections of the remaining seasonal periods (if information has already been provided on the critical life stages and biologically significant activities [e.g., spawning, migration]) that increase the vulnerability of the potentially affected biota at the proposed site.				
34	Ecology – Aquatic			ESRP 4.3.2	Has the applicant provided documentation of consultation with the applicable Federal, state, regional, local or affected Native American tribal agencies, where construction activities for the proposed project (including transmission lines) may affect protected species?				
35	Ecology – Aquatic			ESRP 4.3.2	Is there a discussion of the effect of noise from pile driving or other construction activities on susceptible aquatic biota?* (*This item has been requested from the NE and SE region of NMFS on NRC reviews. It should not be a reason not to accept the application but may need an RAI if susceptible listed species are present and it is not included in the application.				
36	Ecology – Aquatic		1	ESRP 5.3.1.2 and from NPDES regulations for intakes 40 CFR 125.84(b)(2)	Is there a sufficiently detailed description in the text of the ER for the intake structure? Does the description include plans and cross-sectional schematics indicating size of facility, relation to waterbodies, and type of intake screen? And the through screen velocity (as designed)?				
37	Ecology – Aquatic		1	ESRP 5.3.1.2	Has the applicant discussed how the intake system will be compliant with the National Pollutant Discharge Elimination System (NPDES) Permit under Sections 316(b), 401 and 402 of the Clean Water Act (CWA)?				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or where information was found and any other pertinent information.
38	Ecology – Aquatic		1	ESRP 5.3.1.2 and from NPDES regulations for intakes 40 CFR 125.84(b)(2)	Is adequate design information available to determine if the intake corresponds to regulations in 40 CFR 125.84(b)(1) and (2) for Track 1 requirements for new facilities that withdrawal be equal to or greater than 10 MGD, that the through screen design intake velocity is a maximum of 0.5 ft/s and that the intake flow is at a level commensurate with closed-cycle recirculating cooling water system?				
39	Ecology – Aquatic		1	ESRP 5.3.1.2 and from NPDES regulations for intakes 40 CFR 125.84(b)(2)	Is adequate information available to ensure that the cooling water intake structures meet the requirements in 40 CFR 125.84(b) (3) of either (1) total design intake flow of less than 5% of source water annual mean flow on a freshwater river or stream, (2) does not disrupt the natural thermal stratification or turnover pattern of source water on a lake or reservoir (unless deemed beneficial by a fishery management agency) or (3) for estuary or tidal rivers for one tidal cycle of ebb and flow is no greater than 1 percent of the volume of the water column within the area centered about the opening of the intake with a diameter defined by the distance of one tidal excursion at the mean low water level?				
40	Ecology – Aquatic		1	ESRP 5.3.1.2	Has the applicant identified and described adverse impacts including the susceptibility of important aquatic species at life stages to entrainment and impingement from cooling system intake operation at nearby facilities or co-located units to aquatic ecosystems?				
41	Ecology – Aquatic		1	ESRP 5.3.1.2 and from NPDES regulations for intakes 40 CFR 125.84(b)(2)	Have measures or controls to limit adverse impacts been identified? If the design does not meet the requirements of Track I of 40 CFR 125.84(b) is there a demonstration that the technologies employed will reduce the level of adverse environmental impact to a level comparable to that which could be achieved by closed-cycle cooling in Track 1?				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or where information was found and any other pertinent information.
42	Ecology – Aquatic		1	ESRP 5.3.1.2 and from NPDES regulations for intakes 40 CFR 125.84(b)(2)	Has the applicant considered whether there are “important” aquatic organisms and their life stages susceptible to impingement, or entrainment within the hydraulic zone of influence of the cooling water intake structure?				
43	Ecology – Aquatic		1	ESRP 5.3.1.2	Is there information on the cooling system concerning the potential for altered hydrodynamic characteristics induced by intake system operation (e.g., altered circulation patterns) to affect attraction of aquatic biota?				
44	Ecology – Aquatic		1	ESRP 5.3.1.2	What is the extent and seasonal variation of any altered hydrodynamic characteristics induced by inlet system operation?				
45	Ecology – Aquatic		1	ESRP 5.3.1.2	Are there plans for recirculation of heated effluent from the facility discharge system, which has the potential for increased impacts of entrainment, and impingement?				
46	Ecology – Aquatic		1	ESRP 5.3.2.2	Has the applicant identified adverse impacts of cooling system discharge operation on aquatic biota?				
47	Ecology – Aquatic		1	ESRP 5.3.2.2	Is there a sufficiently detailed description in the text of the ER for the discharge structure? Does the description include plans and cross-sectional schematics indicating size of facility, relation to waterbodies, and discharge design?				
48	Ecology – Aquatic		1	ESRP 5.3.2.2	Have thermal, chemical, and physical alterations to the receiving waterbody been identified that may affect aquatic biota or habitats?				
49	Ecology – Aquatic		1	ESRP 5.3.2.2	Have measures or controls to limit adverse impacts been identified?				
50	Ecology – Aquatic		1	ESRP 5.3.2.2	Has the applicant discussed how the discharge system will be compliant with the NPDES Permit under Sections 316(a), 401 and 402 of the CWA?				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or where information was found and any other pertinent information.
51	Ecology – Aquatic		1	ESRP 5.3.2.2	Are there “important” aquatic species present in the vicinity of the discharge system?				
52	Ecology – Aquatic		1	ESRP 5.3.2.2	Is there a description of potential impacts to the biota from operation of the proposed discharge system?				
53	Ecology – Aquatic		1	ESRP 5.3.2.2	Are the aquatic species susceptible to thermal effects resulting from facility cooling-system discharges to the receiving waterbodies?				
54	Ecology – Aquatic		1	ESRP 5.3.2.2	Is there information to determine if thermal effects will be detectable or may destabilize or noticeably alter population levels?				
55	Ecology – Aquatic		1	ESRP 5.3.2.2	Are the aquatic species susceptible to chemical effects resulting from facility cooling-system discharges to the receiving waterbodies?				
56	Ecology – Aquatic		1	ESRP 5.3.2.2	Is there information to determine if chemical effects will be detectable or may destabilize or noticeably alter population levels?				
57	Ecology – Aquatic		1	ESRP 5.3.2.2	Are the aquatic species susceptible to physical effects resulting from facility cooling-system discharges to the receiving waterbodies?				
58	Ecology – Aquatic		1	ESRP 5.3.2.2	Is there information to determine if physical effects will be detectable or may destabilize or noticeably alter population levels?				
59	Ecology – Aquatic		1	ESRP 5.3.2.2	Has the applicant considered the biological effects of thermal, chemical, and physical alterations to the receiving waterbody on the identified “important” aquatic species?				
60	Ecology – Aquatic		1	ESRP 5.5.1	Did the applicant provide data for aquatic resource impacts related to waste systems?				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes:
61	Ecology – Aquatic		1	ESRP 5.6.2	1. Is the following material found and cited in the Application? Has the applicant identified building, operational and maintenance activities associated with transmission facilities that could adversely affect “important” aquatic species and habitats? The resources to be considered include marshlands, impoundments, and other waterbodies.				
62	Ecology – Aquatic		1	ESRP 5.6.2	If adverse impacts of sufficient magnitude have been identified, has the applicant identified the potential mitigating actions or alternative practices to limit or avoid the impacts?				
63	Ecology – Aquatic		1	ESRP 6.5.2	Is the applicant planning on completing preoperational/operational monitoring related to aquatic resources? If so, what will each program entail (both in schedule and scope)?				
64	Ecology – Aquatic		1	ESRP 6.5.2	Has the applicant supplied a basis for the decision to conduct/not conduct monitoring (preapplication/preoperational/operational)?				
65	Ecology – Aquatic		1	Cumulative Impacts ISG-26	Has the applicant identified the past, present and reasonably foreseeable future Federal, non-Federal and private actions that could have meaningful cumulative impacts with the proposed action and that have occurred/will occur in the potential impact area that may contribute to a cumulative impact on aquatic resources?				
66	Ecology – Aquatic		1	Cumulative Impacts (ESRP 4.7 proposed) Endangered species act.	Has the applicant identified non-Federal projects in the region that may contribute to a cumulative impact on “important” species or habitat?				
67	Ecology – Aquatic		1	Alternative Site ESRP 9.3	Has the applicant provided reconnaissance data to characterize the aquatic resource and “important” aquatic species impacts at the alternative sites?				

Appendix E – Terrestrial Ecology

The purpose of this table is to provide the NRC with a deliverable for the Environmental Report Acceptance Review that will assist them in implementing Office Instruction NRO-REG-100. The PNNL version of Table 1 varies somewhat from Table 1 of Attachment D found in the office instruction. This table may be used either in addition to the Sufficiency Review Checklist or in lieu of the checklist. For all the items where there is a “1” listed in the priority column, the accident reviewer is the primary reviewer. In addition to the primary review responsibilities, the accident reviewer should also be looking at the ESRP sections shown in the “Review Interface” portion of each primary ESRP (listed as a “2” in the priority column).

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
1	Ecology – Terrestrial			ESRP 2.4.1	Has the applicant provided a map depicting upland and wetland habitats (terrestrial habitats) on and adjacent to the project area?				
2	Ecology – Terrestrial			ESRP 2.4.1	Has the applicant provided descriptions of each terrestrial habitat on and adjacent to the project area? Do the descriptions include dominant plant species in vegetative strata such as tree canopy, woody understory, and groundcover? Are the descriptions keyed to the map indicated above?				
3	Ecology – Terrestrial			ESRP 2.4.1	Has the applicant provided general discussions of the wildlife that may be expected in each upland and wetland habitat? Do the discussions address mammals, birds, reptiles, and amphibians?				
4	Ecology – Terrestrial			ESRP 2.4.1	Has the applicant referenced field studies for acquiring the data forming the basis for the three items above? Do the field studies provide a minimum of one year of field data for each key season?				
5	Ecology – Terrestrial			ESRP 2.4.1	Has the applicant reported a wetland delineation and/or US Army Corps of Engineers jurisdictional determination for the site? If either or both are lacking, does the applicant outline its tentative plans for pursuing the missing documents?				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
					1. Is the following material found and cited in the Application?				
6	Ecology – Terrestrial			ESRP 2.4.1	Has the applicant identified each wetland occurrence as jurisdictional or non-jurisdictional (i.e., isolated)				
7	Ecology – Terrestrial			ESRP 2.4.1	Has the applicant provided functional assessment data for each wetland occurrence on the site using an appropriate and widely recognized procedure?				
8	Ecology – Terrestrial			ESRP 2.4.1	Has the applicant provided the same information requested above for the site for the proposed transmission line corridors and other corridors or locations for offsite facilities?				
9	Ecology – Terrestrial			ESRP 2.4.1	Has the applicant discussed how disturbances to terrestrial habitats may facilitate establishment and spread of invasive species?				
10	Ecology – Terrestrial			ESRP 2.4.1	Has the applicant provided information on terrestrial habitats for the surrounding landscape. These habitats may be identified and described at a higher level (i.e., more general) than for the site.				
11	Ecology – Terrestrial	Insert Team member name	1	ESRP 2.4.1	Has the applicant identified the species and habitats that will be considered “important” ecological resources (definition of “important” species and habitats is found in Table 2.4.1-1) of the site, vicinity, transmission corridors, and offsite areas for evaluation of potential impacts on them?				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
					1. Is the following material found and cited in the Application?				
12	Ecology – Terrestrial		1	ESRP 2.4.1	Did the applicant describe “important” species and their spatial and temporal distributions on and in any onsite or offsite lands that could be affected, including (as appropriate) their relative abundance, critical habitat, and their life histories: critical life stages, biologically significant activities, seasonal habitat requirements and population fluctuations, food chain, and other interspecific relationships?				
13	Ecology – Terrestrial		1	ESRP 2.4.1	Has the applicant communicated with local offices of the appropriate Federal, State, regional, local, and affected Native American tribal agencies to determine the possible presence of “important” species?				
14	Ecology – Terrestrial		1	ESRP 2.4.1	Did the applicant identify and describe the location of wildlife sanctuaries and natural areas that might be affected by the proposed action?				
15	Ecology – Terrestrial		1	ESRP 2.4.1	Did the applicant list species that are of concern as disease vectors or pests?				
16	Ecology – Terrestrial		1	ESRP 2.4.1	Did the applicant describe the natural and man-induced effects (e.g., farming, logging, grazing, and burning), preexisting environmental stresses (e.g., infestations, epidemics, and catastrophes), and the current ecological conditions that are indicative of such stresses?				
17	Ecology – Terrestrial		1	ESRP 2.4.1	Did the applicant describe the location of any ecological or biological studies of the site or its environs that are recent or currently in progress?				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
18	Ecology – Terrestrial		1	ESRP 4.3.1	1. Is the following material found and cited in the Application? Has the applicant provided a map overlaying the proposed project footprint over terrestrial habitat maps indicated above for ESRP 2.4.1? Does the overlay show the site boundary and construction footprint, including locations of proposed structures, equipment storage, and construction material laydown areas, borrow areas, haul roads, and spoils and waste-disposal areas, and a map showing the locations of existing transmission corridors, corridor expansion areas, and any new corridors?				
19	Ecology – Terrestrial			ESRP 4.3.1	Has the applicant provided area estimates for encroachments by the project footprint into each terrestrial habitat? Do the estimates distinguish between permanent and temporary impacts?				
20	Ecology – Terrestrial			ESRP 4.3.1	Has the applicant estimated the areas of jurisdictional and non-jurisdictional (isolated) wetlands subject to impact? Ideally, the estimates should distinguish: fill versus other impacts (e.g., forest canopy removal) and permanent versus temporary impacts.				
21	Ecology – Terrestrial		1	ESRP 4.3.1	Has the applicant provided information on the impacts on “important” terrestrial species and habitats in the vicinity of the site, transmission corridors, and any other offsite areas which would be affected by construction?				
22	Ecology – Terrestrial		1	ESRP 4.3.1	Does the applicant have a proposed schedule of construction activities?				
23	Ecology – Terrestrial		1	ESRP 4.3.1	Did the applicant describe the clearing methods, temporary and permanent erosion, runoff, and siltation control methods, dust suppression methods, and other construction practices for control or suppression to be used on and in the vicinity of the site and along transmission corridors and at any other offsite areas? Has the applicant confirmed that the methods described conform to standard industry best management practices?				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
24	Ecology – Terrestrial		1	ESRP 4.3.1	1. Is the following material found and cited in the Application? Did the applicant estimate or discuss the potential for bird collisions with elevated construction equipment (e.g., cranes)?				
25	Ecology – Terrestrial		1	ESRP 4.3.1	Has the applicant provided a list of any “important” species and habitats that could be affected by construction, particularly Federally and State-listed threatened or endangered species, on and in the vicinity of the site and along transmission corridors and at any other offsite areas?				
26	Ecology – Terrestrial		1	ESRP 4.3.1	Has the applicant proposed a conceptual mitigation plan (e.g., avoidance, minimization, restoration, and/or compensation) for habitat losses, including wetlands and other “important” habitats, or for disruption of the life processes of “important species” and other species where appropriate? Does the discussion of wetland mitigation consider wetland functions and values?				
27	Ecology – Terrestrial		1	ESRP 4.3.1	Has the applicant identified the distance from the source beyond which construction noise levels would be expected to attenuate to below the 80- to 85-adjusted decibels threshold at which wildlife behavior is affected, and a comparison of that distance to that from the source of construction noise to locations of any Federally or State-listed threatened or endangered species?				
28	Ecology – Terrestrial		1	ESRP 4.3.1	Has the applicant provided documentation of consultation with the appropriate Federal, State, regional, local, and affected Native American tribal agencies, at a minimum the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service, and appropriate State resource agency(ies)?				
29	Ecology – Terrestrial		1	COL/ESP-ISG-26	Has the applicant identified other projects within the region that affect or could potentially affect the same “important” terrestrial species and habitats, particularly Federally listed threatened or endangered species and/or designated or proposed critical habitat?				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
30	Ecology – Terrestrial		1	ESRP 5.3.3.2	1. Is the following material found and cited in the Application? Has the applicant identified the concentration of chemicals in cooling tower basins or spray canals on a seasonal basis?				
31	Ecology – Terrestrial		1	ESRP 5.3.3.2	Has the applicant considered the impacts of drift deposition on vegetation? Has the applicant identified isopleths of deposition at ground levels on a seasonal basis? Has the applicant described natural vegetation and agricultural crops onsite and offsite that occur in the isopleths?				
32	Ecology – Terrestrial		1	ESRP 5.3.3.2	Has the analysis of impacts of salt drift considered “important” terrestrial species and habitats?				
33	Ecology – Terrestrial		1	ESRP 5.3.3.2	Did the applicant estimate or discuss the potential for bird collisions with cooling towers and other tall structures?				
34	Ecology – Terrestrial		1	ESRP 5.3.3.2	Has the applicant considered the detrimental effects that increased fogging/icing could have on terrestrial habitats or crops?				
35	Ecology – Terrestrial		1	ESRP 5.3.3.2	Has the applicant considered the impact to shoreline fauna, flora, and any wetland habitat, including important species and habitats, from operation of the heat dissipation system (e.g., drawdown of waterbodies used for plant cooling, particularly during drought periods, salt deposition)?				
36	Ecology – Terrestrial		1	ESRP 5.3.3.2	Has the applicant considered any measures or controls to limit or otherwise mitigate for adverse heat dissipation system impacts of operations on terrestrial resources?				
37	Ecology- Terrestrial		2	ESRP 5.3.3.2	There are no technical deficiencies in support of terrestrial resources for the sections mentioned in Review Interfaces in ESRP 5.3.3.2.				
38	Ecology- Terrestrial		1	ESRP 5.5.1	Has the applicant considered effects on terrestrial ecology at offsite disposal sites (other than licensed commercial sites)?				
39	Ecology – Terrestrial		1	ESRP 5.6.1	Has the applicant described right-of-way maintenance practices, such as chemical and mechanical vegetation control methods, that are anticipated to affect terrestrial habitats?				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
40	Ecology – Terrestrial		1	ESRP 5.6.1	1. Is the following material found and cited in the Application? Has the applicant identified any special right-of-way maintenance practices to minimize adverse effects in “important” habitats (e.g., floodplains, wetlands, natural areas, etc.), including those that could result in beneficial effects on terrestrial biota?				
41	Ecology – Terrestrial		1	ESRP 5.6.1	Has the applicant identified the impacts on “important” species and habitats, including Federally and State-listed threatened or endangered species and/or Federally designated or proposed critical habitat along the transmission corridors?				
42	Ecology – Terrestrial		1	ESRP 5.6.1	Has the applicant considered how the maintenance of expanded or new transmission corridors could affect the proliferation of invasive species (as defined in Executive Order 13112)?				
43	Ecology – Terrestrial		1	ESRP 5.6.1	Has the applicant identified and evaluated new and significant information on the impacts of transmission system operation and rights-of-way maintenance (cutting and herbicide application), bird collisions with power lines, the special case of rights-of-way maintenance impacts on floodplains and wetlands, and the effects of electromagnetic fields on flora and fauna (plants, agricultural crops, honeybees, wildlife, and livestock) since the publication of NUREG 1437)? If so, has the applicant evaluated how this information applies to the proposed project?				
44	Ecology – Terrestrial		1	ESRP 5.6.1	Has the applicant identified a list of the adverse impacts to habitats and species (particularly “important” habitats and species) from the operation and maintenance of transmission systems and considered measures or controls to limit or otherwise mitigate such impacts?				
45	Ecology – Terrestrial		2	ESRP 5.6.1	There are no technical deficiencies in support of terrestrial resources for the sections mentioned in Review Interfaces in ESRP 5.6.1				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
					Sufficiency Review Question 1. Is the following material found and cited in the Application?				
46	Ecology – Terrestrial		1	ESRP 6.5.1	Did the applicant provide any information on monitoring activities for “important” species and habitats expected to be affected by the proposed project.				
47	Ecology – Terrestrial		1	ESRP 6.5.1	Does the applicant plan on completing preoperational/operational monitoring related to terrestrial resources? If so, what will each program entail, both in schedule and scope?				
48	Ecology – Terrestrial		1	ESRP 6.5.1	Has the applicant supplied a basis for the decision to conduct/not conduct monitoring (preapplication/preoperational/operational)?				
49	Ecology – Terrestrial		2	ESRP 6.5.1	There are no technical deficiencies in support of terrestrial resources for the sections mentioned in Review Interfaces in ESRP 6.5.1.				
50	Ecology – Terrestrial		1	CFR 10 51.45 (c)	A description of the environmental impacts of preconstruction activities related to terrestrial ecology at the site and an analysis of the cumulative impacts of the activities to be authorized by the COL in light of the preconstruction impacts, as explained in COL/ESP-ISG-4. The ISG and the supplement are available at http://www.nrc.gov/reading-rm/doc-collections/isg/col-app-design-cert.html on the NRC’s public website.				
51	Ecology – Terrestrial		1	Cumulative Impacts (ESRP 4.7 proposed)	Has the applicant identified the activities of other agencies or organizations that have occurred or will occur in the project area that may contribute to a cumulative impact on terrestrial resources, including “important” terrestrial species or habitats?				
52	Ecology - Terrestrial		1	Alternative Site (ESRP 9.3)	Has the applicant provided reconnaissance data to characterize terrestrial resources and “important” terrestrial species and habitat impacts at the alternative sites?				

**Table 1. Environmental Report Acceptance Review
Appendix F – Hydrology**

The purpose of this table is to provide the NRC with a deliverable for the Environmental Report Acceptance Review that will assist them in implementing Office Instruction NRO-REG-100. The PNNL version of Table 1 varies somewhat from Table 1 of Attachment D found in the office instruction. This table may be used either in addition to the Sufficiency Review Checklist or in lieu of the checklist. For all the items where there is a “1” listed in the priority column, the accident reviewer is the primary reviewer. In addition to the primary review responsibilities, the accident reviewer should also be looking at the ESRP sections shown in the “Review Interface” portion of each primary ESRP (listed as a “2” in the priority column). Material highlighted in green is related to groundwater review. However, sometimes review requirements are generally stated, so read the context of all review areas/topics carefully to determine if groundwater/hydrogeology SME review is needed.

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes:
					1. Is the following material found in the Application?				
1	Hydrology	Insert Team member name	1	ESRPs 2.3.1 and 2.3.2	Maps (including digital databases such as a Geographic Information System [GIS]) of sufficient detail to show the relationship of the site to major hydrological systems that could affect or be affected by plant construction or operation. These should include: 1. maps showing the relationship of the site to surface waterbodies that could affect or be affected by plant water use 2. maps (and cross sections where feasible) showing those portions of groundwater aquifer systems that could be affected by plant withdrawals and/or discharges				
2	Hydrology		1	ESRP 2.3.1	For surface waterbodies used as a heat sink, maximum, average maximum, average, average minimum, and minimum monthly temperature of the waterbody.				
3	Hydrology		1	ESRP 2.3.1	For surface waterbodies and wetlands, a description of the floodplain and its relationship to the site; a description of wetlands and their relationship to the site; the design-basis flood (DBF) elevation; and, where applicable, the DBF discharge.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
4	Hydrology		1	ESRP 2.3.1 (freshwater streams only)	<p>The following freshwater stream information should be included:</p> <ol style="list-style-type: none"> 1. a list of major streams, size of drainage areas, and gradient 2. maximum, average maximum, average, average minimum, and minimum monthly flow 3. flood frequency distributions, including levee failures 4. flood control measures (reservoirs, levees, flood forecasting) 5. historical drought stages and discharges by month and the 7-day once-in-10-years low flow 6. important short-duration flow fluctuations (e.g., diurnal release variations from peaking operation of upstream hydroelectric project) 7. within the influence of the intake and discharge structures, velocity distribution (horizontal and vertical), bathymetry at and near the intake structure, bathymetry at and downstream of the discharge structure, and stream cross-sections 8. other hydrographic modifications (e.g., diversion dams, channelization) 9. a list of wetlands and flood plains and their seasonal characteristics. 				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic 1. Is the following material found in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
5	Hydrology		1	ESRP 2.3.1 (lakes and impoundments only)	The following lake and impoundment information should be included: 1. a description of lake or impoundment 2. where influenced by the intake or discharge structures (or vice-versa), size, location, and elevation of outlets 3. a summary description of reservoir operating rules 4. annual yield and dependability 5. variations in inflows, outflows, water surface elevations, and storage volumes and retention time 6. net loss, including evaporation and seepage 7. current patterns, including frequency distributions of current speed, direction, and persistence 8. temperature distribution (horizontal and vertical) and stratification and seasonal variations of density-induced currents 9. detailed bathymetry in vicinity of station intake and outfall.				
6	Hydrology		1	ESRP 2.3.1 (estuaries and oceans only)	The following estuary and ocean information should be included: 1. shoreline and bottom descriptions, including seasonal variations because of sediment transport 2. tidal current patterns (velocities and phases), range, and excursion 3. nontidal circulation patterns, including frequency distributions of current speed, direction, and persistence 4. temperature and salinity distribution (horizontal and vertical), including temporal variations 5. detailed bathymetry in the vicinity of the station intake and outfall 6. for estuaries, maximum, average maximum, average, average minimum, and minimum monthly river discharge and flushing characteristics.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
7	Hydrology		1	ESRP 2.3.1 (groundwater)	<p>The following groundwater information should be included:</p> <ol style="list-style-type: none"> 1. geologic formations; areal extent, elevation, and thickness of aquifers; and groundwater recharge and discharge areas 2. piezometric contour maps and hydraulic gradients (historical [if available] and current) 3. flow travel times which may be significant such as; to site boundaries, nearest offsite wells, and groundwater discharge areas 4. soil properties, including permeabilities or transmissivities, storage coefficients or specific yields, total and effective porosities, clay content, sorption coefficients, and bulk densities 5. interactions between site surface and groundwaters such as groundwater recharge and discharge rates 6. historical and seasonal trends in groundwater elevation or piezometric levels; interactions between different aquifers 7. recharge rates, soil moisture characteristics, and moisture content in vadose zone 8. existence of any local aquifers designated or proposed to be designated as “sole source aquifers.” 				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic 1. Is the following material found in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
8	Hydrology		1	ESRP 2.3.2	<p>Quantitative description of present and known future groundwater withdrawals on the site and for distances great enough to cover aquifers that may affect or be adversely affected by the plant. This should include a quantitative description of any water uses that provide potential liquid pathways for both radiological and nonradiological effluents. The following should be included for each withdrawal or discharge:</p> <ol style="list-style-type: none"> 1. location and depth of well with respect to the site (from the ER, the site visit, peer-reviewed technical literature, and consultation with State and local agencies) 2. identification of aquifers (from the ER, peer-reviewed technical literature, and consultation with Federal, State, regional, local, and affected Native American tribal agencies) 3. the average monthly withdrawal rates by use category (from the ER, the site visit, peer-reviewed technical literature, and consultation with Federal, State, regional, local, and affected Native American tribal agencies). 4. water levels resulting from drawdown due to groundwater withdrawals that may result in transport from the site to offsite wells (from the ER, the site visit, peer-reviewed technical literature, and consultation with Federal, State, regional, local, and affected Native American tribal agencies). 				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic 1. Is the following material found in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
9	Hydrology		1	ESRP 2.3.2	Quantitative description of present and known future surface water uses (withdrawals, consumptions, and returns) that are within the hydrological system in which the site is located and that may affect or be affected by the plant. This should include a quantitative description of any water uses that provide potential liquid pathways for both radiological and nonradiological effluents. The following should be included for each withdrawal or discharge: 1. locations of diversions and returns with respect to the site and the waterbody (from the site visit, the general literature, and consultation with Federal, State, regional, local, and affected Native American tribal agencies) 2. identification of the waterbody (from the ER and the general literature) 3. the average monthly withdrawal and return rate for each diversion by use category.				
10	Hydrology		1	ESRP 2.3.2	Quantitative and qualitative description of recreational, navigational, instream, and other nonconsumptive present and known future water uses that could affect or be affected by the proposed project. This should include the following (from the ER, site visit, peer-reviewed technical literature, and consultation with Federal, State, regional, local, and affected Native American tribal agencies): 1. identification of waterbodies and locations with respect to the site (maps may be useful) 2. the kind and location of activity on the waterbody (maps may be useful) 3. the use rate with time variation.				
11	Hydrology		1	ESRP 2.3.2	Summary of statutory and other legal restrictions relating to water use or specific waterbody restrictions on water use imposed by Federal or State regulations.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic 1. Is the following material found in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
12	Hydrology		1	ESRP 2.3.2	Descriptions of pollutant sources with discharges to water that may interact with the plant, including locations relative to the site and the affected waterbodies, and the magnitude and nature of the pollutant discharges, including spatial and temporal variations.				
13	Hydrology		1	ESRPs 2.3.2 and 3.3.1	<p>A water-use diagram for the plant showing:</p> <ol style="list-style-type: none"> 1. flow rates to and from the various water systems (e.g., circulating water system, sanitary system, radwaste and chemical waste systems, and service water systems) 2. points of consumption 3. source and discharge locations <p>A water-use diagram of other station water uses (i.e., all facilities not associated with the proposed plant) showing:</p> <ol style="list-style-type: none"> 4. flow rates to and from the facility 5. average water consumption 6. maximum water consumption <p>Data and narrative description for:</p> <ol style="list-style-type: none"> 7. various plant water systems, their interconnections, and their operational interdependence and coordination 8. maximum water consumption 9. water consumption during periods of minimum water availability 10. average operation by month and by plant operating status. 				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic 1. Is the following material found in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
14	Hydrology		1	ESRP 2.3.3	<p>The mean, range, and temporal and spatial variations of the surface water and groundwater-quality characteristics.</p> <p>For surface waters: water temperature, suspended solids, total dissolved solids, hardness, turbidity, color, odor, conductivity, dissolved oxygen, biological oxygen demand (BOD), chemical oxygen demand (COD), phosphorus forms (total and orthophosphate), nitrogen forms (ammonia, nitrate, nitrite, organic), salinity, chlorides, sulfate, sodium, potassium, calcium, magnesium, heavy metals (e.g., Hg, Pb), pH, phytoplankton (chlorophyll <i>a</i>), and indicator micro-organisms (e.g., total coliform, fecal coliforms, fecal streptococci).</p> <p>For groundwaters: the above-surface water data, minus phytoplankton and with silica, iron, carbon dioxide, and bicarbonate added.</p>				
15	Hydrology		1	ESRP 2.3.3	<p>Descriptions such as 303(d) lists of pre-existing aquatic environmental stresses and their effects on surface or groundwater quality for waters that interact with the plant (e.g., waterbodies at or near the site that do not meet established water-quality standards).</p>				
16	Hydrology			ESRP 3.3.1	<p>A narrative description of the various plant water systems, their interconnections, and their operational interdependence and coordination.</p>				
17	Hydrology		1	ESRP 3.3.2	<p>A description and purpose of the water treatment systems used in the plant, including:</p> <ol style="list-style-type: none"> 1. identification, quantities, and points of addition of chemicals and additives to be used by each system 2. operating cycles for each water treatment system for normal modes of plant operation (e.g., full power operation, shutdown/refueling, and startup). 				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic 1. Is the following material found in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
18	Hydrology		1	ESRP 3.4.1	<p>Descriptions of anticipated operational modes and the estimated periods of time that the system will operate in each mode including:</p> <ol style="list-style-type: none"> 1. for each anticipated operational mode, quantities of heat generated, dissipated to the atmosphere, and released in liquid discharges 2. for each operational mode, water source and quantities of water withdrawn, consumed, and discharged. 				
19	Hydrology			ESRP 3.4.1	Status of the NPDES permit and any 316(a/b) demonstrations.				
20	Hydrology		1	ESRP 3.4.2	<p>For INTAKE SYSTEMS, include:</p> <ol style="list-style-type: none"> 1. a drawing of the intake structure that shows the relationship of the structure to the water surface, bottom geometry, and shoreline 2. a description of the cooling water pumping facility 3. a description of the trash racks, traveling screens, trash baskets, and fish-return devices 4. performance characteristics (e.g., flow rates, intake velocities) for the operational modes identified by the ESRP 3.4.1 reviewer 5. performance characteristics for specific intake-related functions, such as de-icing, trash-rack clearing, screen washing, trash basket removal, or fish-return system operation 6. the location and description of components for the addition of chemicals (e.g., corrosion inhibitors or antifouling agents) to the intake system. 				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic 1. Is the following material found in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
21	Hydrology		1	ESRP 3.4.2	For DISCHARGE SYSTEMS, include: 1. drawings of the outfall structure, showing its location in the receiving waterbody, relationship to water surface, bottom geometry, and shoreline 2. a description of discharge canal or discharge lines 3. performance characteristics (e.g., discharge flow rates, discharge velocities, discharge temperatures, and temperature differentials) for the operational modes identified by the reviewer for ESRP 3.4.1 4. descriptions of specific discharge-related components (e.g., diffusers and fish barriers).				
22	Hydrology		1	ESRP 3.4.2	For HEAT DISSIPATION SYSTEMS, include: 1. the location of heat dissipation system components relative to other site features 2. the design details of heat dissipation system components affecting system performance, including the cooling towers, cooling lakes and ponds, spray ponds or canals, and condensers (once-through systems; see ESRP Tables 3.4.2-1 and -2) 3. site-specific meteorological data (from ESRP 2.7) 4. site-specific water supply data (from ESRP 2.3.1) 5. heat dissipation system performance analyses based on the manufacturer’s design data and site-specific meteorological and hydrological data.				
23	Hydrology		1	ESRP 3.6.1	Descriptions of nonradioactive effluent treatment facilities.				
24	Hydrology		1	ESRP 3.6.1	Average, maximum, and seasonal variations of principal constituents of intake and receiving waters and any minor or trace materials that may be of environmental relevance.				
25	Hydrology		1	ESRP 3.6.1	A list of chemicals processed through each system (e.g., corrosion inhibitors and antifouling agents) and total amounts used per year, frequency of use, and concentrations of these chemicals or their products in each waste stream.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes:
					1. Is the following material found in the Application?				If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
26	Hydrology		1	ESRP 3.6.1	The concentration factor on a seasonal basis for evaporative cooling systems.				
27	Hydrology		1	ESRP 3.6.1	The average and maximum concentration of natural materials in effluent streams.				
28	Hydrology		1	ESRP 3.6.1	The operating cycles for each effluent treatment system for normal modes of facility operation (e.g., full power operation, shutdown/refueling, and startup).				
29	Hydrology		1	ESRP 3.6.2	A description of the systems (both temporary and permanent) to be provided.				
30	Hydrology		1	ESRP 3.6.2	Anticipated quantity and characteristics of treated effluents.				
31	Hydrology		1	ESRP 3.6.2	The ultimate disposal of treated effluents.				
32	Hydrology		1	ESRP 3.6.2	Standards for the proposed sanitary system effluents.				
33	Hydrology		1	ESRP 3.6.2	The NPDES permit or status of the permit (if available).				
34	Hydrology		2	ESRP 3.6.3	Information concerning nonradioactive wastes not considered in ESRPs 3.6.1 and 3.6.2, such as laboratory wastes, storm drainage, trash, hazardous wastes, and debris from bars or screens on the cooling water intake. The description should include estimates of the quantities of wastes, their pollutant concentrations at points of release as appropriate to the system, and other relevant data (water-related aspects only).				
35	Hydrology		2	ESRP 3.6.3	Procedures for any offsite disposal of wastes (water-related aspects only).				
36	Hydrology		2	ESRP 3.6.3	Procedures by which all effluents will be treated, controlled, and discharged to meet State and U.S. Environmental Protection Agency (EPA) effluent limitation guidelines and new source performance standards (water-related aspects only).				

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37	Hydrology		1	ESRP 4.2.1	<p>The following list of data should be obtained:</p> <ol style="list-style-type: none"> 1. descriptions of the physical characteristics of the surface-water bodies and groundwater aquifers obtained from Section 2.3 2. identification and description of project related construction activities expected to result in hydrologic alterations at the site, transmission corridors, and offsite areas. Activities include construction of cofferdams and storm sewers; dredging operations; placement of fill material into the water; creation of shoreside facilities involving bulkheads, piers, jetties, basins, or other structures or activities with potential to alter existing shoreline processes; construction of intake and outfall structures; water channel modifications; construction of roads, bridges and wells; operations affecting water levels (flooding); dewatering activities; and construction activities contributing to sediment runoff (e.g., road construction, clearing and grading, fill or spoil placement). 				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic 1. Is the following material found in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
38	Hydrology		1	ESRP 4.2.1	<p>The following list of data should be provided or obtained from Section 2.3:</p> <ol style="list-style-type: none"> 1. identification of water sources used during construction and the average and maximum use rates of these waters 2. identification of water bodies receiving construction effluents and the expected average and maximum flow rates and physical characteristics (temperature, sediment load, velocities) of these effluents 3. identification of hydrologic alterations expected to result from the project related construction activities listed previously 4. identification and location of groundwater and surface-water users and areas that could be affected by project related hydrologic alterations 5. descriptions of proposed practices and measures to limit or minimize expected hydrologic alterations 6. Federal, State, regional, local, and affected Native American tribal agencies’ best management practices and regulations 7. descriptions of proposed means to ensure construction activity compliance with applicable hydrological standards and regulations. 				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
39	Hydrology		1	ESRP 4.2.2	<p>The following data should be provided or obtained from Section 2.3:</p> <ol style="list-style-type: none"> 1. identification and locations of groundwater and surface-water users and areas that could be impacted by project related construction activities affecting water use 2. predicted impacts on the water users identified in the previous item 3. descriptions of any proposed practices and measures to control construction related water use impacts. Factors to be considered include flooding, drainage, groundwater elevation, erosion, sedimentation, water quality, protection of natural drainage channels and water bodies, protection of shorelines and beaches, restrictions on access to and use of surface water, protection against saltwater intrusion, and handling of fuels, lubricants, oily wastes, chemical wastes, sanitary wastes, herbicides, and pesticides 4. consultations with Federal, State, regional, local, and affected Native American tribal regulators 5. descriptions of proposed means to ensure construction activity compliance with water-quality and water-use standards and regulations 6. water-quality requirements for key elements of aquatic ecosystem and domestic users. 				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
40	Hydrology		1	ESRP 4.2.2	<p>The following list of data should be provided or obtained from Section 2.3:</p> <ol style="list-style-type: none"> 1. descriptions of the site and vicinity waterbodies and aquifers (including sole-source aquifers) 2. descriptions of hydrologic alterations and their related construction activities 3. the physical effects of hydrologic alterations 4. comparisons of water quantity available to other water users with existing and known future water rights and allocations 5. identification of waterbodies receiving construction effluents (e.g., sanitary wastes, cleaning wastes, dust control, fuels and lubricants, chemical, herbicides, pesticides) and the expected average and maximum flow rates and composition of these effluents 6. baseline water-quality data for surface water and groundwater sources used during construction and impacted by construction activities 7. potential changes to surface water and groundwater quality (e.g., heavy metal contamination) resulting from substrate exposure during construction. 				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
41	Hydrology		1	ESRP 5.2.1	<p>The following list of data should be provided or obtained from Section 2.3:</p> <ol style="list-style-type: none"> 1. a quantitative description of present and known future groundwater withdrawals on the site and for distances great enough to cover aquifers that may affect plant water availability or be affected by plant water use. The following should be included for each use: <ol style="list-style-type: none"> (a) location, depth, and elevation of wells (total and cased) and water levels with respect to the plant, (b) identification of aquifers, and (c) average monthly withdrawal rates. 2. operational activities expected to result in hydrologic alterations within the site and vicinity, along transmission corridors, or at offsite areas. These activities can include dredging operations, operations affecting water levels, and dewatering activities. 3. identification and description of the hydrological alterations resulting from the identified operational activities. These can include changes in the flood handling capability of the floodplain, flow and circulation patterns, erosion subsidence, water availability, and sediment transport. 				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
42	Hydrology		1	ESRP 5.2.1	<p>The following list of data should be obtained from Section 2.3:</p> <ol style="list-style-type: none"> 1. descriptions of the physical characteristics of the surface waterbodies and groundwater aquifers 2. quantitative descriptions of proposed water sources, including groundwater sustained yield, 7-day once-in-10-years low flow, flows (including reverse and regulated) and yields during the drought of record, and low lake levels; estimates of frequency and duration of water-supply shortages 3. withdrawals and returns of surface water and ground-water used for plant operation, including rates and water sources. This should include the different operational modes of the plant. The information should also include plant effluent quantity and physical characteristics as a function of the different operational modes 4. a quantitative description of present and known future surface-water uses (diversions, consumptions, and returns) that are within the hydrological system in which the plant is located and that may affect plant water availability or be affected by plant water use. The following should be included for each use: (a) locations of diversions and returns with respect to the plant intake system, (b) identification of waterbodies, and (c) average monthly withdrawal and consumption rate. 				

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43	Hydrology		1	ESRP 5.2.1	<p>The following list of data should be provided:</p> <ol style="list-style-type: none"> 1. identification and locations of surface-water and groundwater users (including aquatic ecosystems) and water-use areas that could be affected by hydrologic alterations resulting from plant operation 2. a summary of statutory and other legal restrictions relating to plant water use and water consumption 3. descriptions of proposed means to ensure compliance with standards and regulations affecting plant water use and water consumption, and proposed practices and measures to limit or minimize operational hydrologic alterations. 				
44	Hydrology		1	ESRP 5.2.2	<p>The following list of data should be provided or obtained from Section 2.3:</p> <ol style="list-style-type: none"> 1. descriptions of the site and vicinity waterbodies and groundwater aquifers 2. descriptions of hydrologic alterations and their related operational activities 3. the physical effects of hydrologic alterations 4. a quantitative description of present and known future surface-water uses, including any station water 5. uses not associated with the proposed project that are within the hydrological system in which the plant is located and that may be adversely affected by the plant. The following should be included for each use: (a) identification of the waterbody, (b) locations of diversions and returns with respect to the plant (diversions located between the plant discharge and the region of complete dilution should be further characterized by location with respect to the waterbody), and (c) average monthly withdrawal and consumption rate for each division by use category (e.g., domestic, municipal, agriculture). 				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic 1. Is the following material found in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
45	Hydrology		1	ESRP 5.2.2	<p>The following list of data should be provided or obtained from Section 2.3:</p> <ol style="list-style-type: none"> 1. a quantitative description of present and known future groundwater withdrawals on the site and for distances great enough to cover aquifers that may be adversely affected by the plant (from Section 2.3 and Section 3 for onsite withdrawals). The following should be included for each use: (a) withdrawal location, (b) depth and elevation of wells (total and cased depth) and water levels, (c) identification of aquifers, and (d) average monthly withdrawal rates by use category 2. comparisons of water quantity available to other water users with existing and known future water rights and allocations 3. a quantitative and qualitative description of recreational, navigational, and other nonconsumptive known future water uses which could affect or be affected by the proposed project. This should include the following: (a) identification of waterbodies and location with respect to the plant, (b) kind and location of activity on the waterbody, and (c) use rate with time variation 4. identification of waterbodies receiving plant effluents and the expected average and maximum flow rates and composition of these effluents (from Section 3) 5. predicted impacts to water users or water-use categories described in the “Data and Information” section of this ESRP 6. baseline water-quality data for surface-water and groundwater sources used for and impacted by plant operation (from ESRP 2.3.3). 				

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46	Hydrology		1	ESRP 5.2.2	<p>1. Is the following material found in the Application?</p> <p>The following list of data should be provided:</p> <ol style="list-style-type: none"> 1. descriptions of any proposed practices and measures to control or limit operational water-use impacts 2. summary of statutory and other legal restrictions relating to water use or specific waterbody restrictions on water use imposed by Federal, State, regional, local, or affected Native American tribal regulations 3. Federal, State, regional, local, and affected Native American tribal standards and regulations applicable to water quality and water use (from consultation with Federal, State, regional, local, and affected Native American tribal agencies) 4. descriptions of proposed means to ensure operational compliance with water quality and water-use standards and regulations. 				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
47	Hydrology		1	ESRP 5.3.1.1	<p>The following list of data should be provided or obtained from Section 2.3:</p> <ol style="list-style-type: none"> 1. bathymetry and sediment characteristics near the intake structure(s) 2. maps depicting station layout with respect to the waterbody, including locations of all intakes and discharges (from Section 3) 3. intake flow rates and velocities as a function of plant operating conditions 4. detailed drawings of the intake structure(s), including the relationship of the structure to the water surface (normal and minimum levels) 5. ambient current patterns in the vicinity of the proposed intake structure(s) 6. descriptions of other intake system design and performance characteristics affecting hydrodynamics (e.g., horizontal and vertical approach velocities, geometry of intake canals, and submerged riprap) 7. descriptions of spatial and temporal alterations of the ambient flow field and of any other physical hydrologic effects induced by intake system operation. 				

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48	Hydrology		1	ESRP 5.3.2.1	<p>The following list of data should be obtained on the RECEIVING SURFACE waterbodies from Section 2.3:</p> <ol style="list-style-type: none"> 1. bathymetry of the waterbodies that may be affected by operation of the plant discharge system with detailed data in the vicinity of the discharge 2. maps depicting station layout with respect to waterbodies, including the locations of all intakes and discharges 3. maximum, average maximum, average, average minimum, and minimum monthly temperatures in the waterbodies 4. erosion characteristics and sediment transport (including rate, bed and suspended load fractions, and gradation analyses) 5. for freshwater streams: maximum, average maximum, average, average minimum, and minimum monthly flow rates; historical drought stages and flow rates by month, 7-day once-in-10-years low flow; important short duration fluctuations (e.g., diurnal release variations from peaking operation of upstream hydroelectric plant, diurnal temperature variations); velocity and temperature distributions (horizontal and vertical) near the discharge structure and downstream to the area of total mixing. 				

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49	Hydrology		1	ESRP 5.3.2.1	<p>The following list of data should be obtained on the RECEIVING SURFACE waterbodies from Section 2.3:</p> <ol style="list-style-type: none"> 1. For lakes and impoundments: description of the lake or impoundment geometry; location and elevation of impoundment outlets; elevation area capacity curves; summary description of operating rules; maximum, average maximum, average, average minimum, and minimum monthly inflow and outflow rates; temperature distributions (horizontal and vertical); and seasonal variations of density induced currents 2. For estuaries and oceans: seasonal variations in the shoreline and bottom geometry due to sediment transport; tidal current patterns (velocities and phases), range, and excursion; nontidal circulation patterns, including frequency distributions of current speed, direction, and persistence; and temperature and salinity distribution (horizontal and vertical), including temporal variations. 3. For estuaries: maximum, average maximum, average, average minimum, and minimum monthly river discharge and flushing characteristics. 				
50	Hydrology		1	ESRP 5.3.2.1	<p>The following list of data should be obtained on the DISCHARGE STRUCTURE from Section 3:</p> <ol style="list-style-type: none"> 1. detailed drawings of the discharge structure(s), including relationship of structure(s) to the water surface (normal and minimum) and waterbody bathymetry 2. water flow rates, velocities, and temperatures in the discharge stream(s) as a function of operating conditions. 				

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					1. Is the following material found in the Application?				If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
51	Hydrology		1	ESRP 5.3.2.1	The following list of information on the applicant’s models, if used: 1. For numerical models: (a) theory, assumptions, and basis for applicability; (b) procedures used to estimate model parameters (e.g., diffusion coefficients); (c) model verification; and (d) the applicant’s predicted temperature distributions, areas for isotherms, dilution rates, and time of passage through plume. 2. For physical models: (a) physical model facilities (e.g., dimensions of the plume and flow rates), (b) modeling techniques and scaling relationships, (c) data collection and analysis techniques (e.g., number and locations of temperature probes, infrared mapping), (d) prototype verification (if any), and (e) the applicant’s flow fields and temperature distributions for critical and average hydrological conditions.				
52	Hydrology		2	ESRP 5.5.1	Descriptions of nonradioactive waste systems, including quantities, composition, and frequency of waste discharges to water, land, and air. (water-related aspects only)				
53	Hydrology		1	ESRP 5.5.1	For discharges to water, waste concentrations at the point of discharge, predicted dilution in the receiving waterbody, and estimates of concentrations at various distances from the discharge point.				
54	Hydrology		1	ESRP 5.5.1	Ambient concentrations in the receiving waterbody of the chemicals and other materials contained in the waste discharges.				
55	Hydrology		1	ESRP 5.5.1	Receiving waterbody water-quality criteria for domestic, industrial, agricultural, and recreational uses.				
56	Hydrology		1	ESRP 5.5.1	Water use for the receiving waterbodies.				
57	Hydrology		1	ESRP 5.5.1	Soil data for disposal site (other than licensed commercial sites), and potential for transport of wastes to ground and surface waters.				

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					1. Is the following material found in the Application?				If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
58	Hydrology		1	ESRP 5.5.1	Other site-specific waste-disposal activities (e.g., spoils from intermittent dredging activities).				
59	Hydrology		1	ESRP 5.5.1	Applicant’s NPDES permit and water quality certification (or their status if not issued).				
60	Hydrology		2	ESRP 5.5.2	Descriptions of systems that create mixed wastes, including quantities of waste produced (water-related aspects only; from Section 3).				
61	Hydrology		2	ESRP 5.5.2	Anticipated disposal plans for the mixed wastes (i.e., disposal at a mixed waste disposal facility, shipment to a treatment facility, or storage onsite; water-related aspects only).				
62	Hydrology		2	ESRP 5.5.2	Estimated environmental impacts, including health effects resulting from exposure to the chemical constituents and those resulting from radiological exposures estimated to be received by workers as a result of mixed-waste testing and storage (water-related aspects only).				
63	Hydrology		2	ESRP 5.5.2	A waste minimization plan that identifies process changes that can be made to reduce or eliminate mixed wastes (water-related aspects only).				
64	Hydrology		2	ESRP 5.10	Listing of potentially adverse impacts to surface and ground waters, and measures and controls to limit adverse impacts of project operation.				

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65	Hydrology		1	ESRP 6.1	<p>The following list of data describing the THERMAL MONITORING should be provided:</p> <ol style="list-style-type: none"> 1. maps showing: (a) features of the plant and site, including the boundaries and bathymetry of all waterbodies adjacent to the site both before and after construction activities; (b) the location of all thermal, hydrological, or aquatic biological monitoring stations; and (c) the predicted extent of the thermal plume 2. the type and frequency of temperature measurements taken at each location as well as the duration of each monitoring program 3. descriptions of the monitoring equipment used 4. descriptions of the data analysis procedures used. 				
66	Hydrology		1	ESRP 6.3	<p>The following list of data describing the HYDROLOGICAL MONITORING should be provided:</p> <ol style="list-style-type: none"> 1. maps showing: (a) features of the plant and site, including the boundaries and bathymetry of all surface waterbodies (including springs) adjacent to the site both before and after construction activities, (b) the locations of all hydrological (including groundwater monitoring wells), thermal, and aquatic biological monitoring stations, (c) locations of all wells potentially influenced by plant construction and operation, and (d) major geomorphic features (e.g., floodplains) and regional geology 2. site vicinity surface and groundwater average and extreme velocities and flow rates 3. sediment transport (suspended and bed load) characteristics and erodability of the site soil 4. the type and frequency of data collected at each location as well as the duration of each monitoring program 5. descriptions of the monitoring equipment used 6. descriptions of the data analysis procedures used 7. documentation of data quality objectives (if any). 				

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67	Hydrology		1	ESRP 6.6	The following list of data describing the CHEMICAL MONITORING should be provided: 1. systems to be sampled 2. location of sampling stations 3. type of sample (e.g., surface grab or depth composite), number of replicates, and method of collecting the sample 4. time of day, time period, and frequency of sampling 5. methods of preserving the samples analytical methods used 6. description of automated monitoring systems used 7. reference or calibration standards used to verify accuracy of methods statistical methods used to interpret results 8. quantitative data on chemical characteristics of surface water and/or groundwater in the site and vicinity, including seasonal ranges and averages and historical extremes 9. data quality objectives 10. quality assurance procedures.				
68	Hydrology		2	10 CFR 51.45(c)	A description of the environmental impacts of preconstruction activities related to water-related aspects of the <i>waste systems</i> at the site and an analysis of the cumulative impacts of the activities to be authorized by the COL in light of the preconstruction impacts, as explained in COL/ESP-ISG-4. The ISG and the supplement are available at http://www.nrc.gov/reading-rm/doc-collections/isg/col-app-design-cert.html on the NRC’s public website.				
69	Hydrology		2	Cumulative Impacts (ESRP 4.7 proposed)	Has the applicant identified activities of other agencies that have occurred or will occur in the region that may contribute to a cumulative impact on water-related aspects of the waste systems?				

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70	Hydrology		2	Cumulative Impacts (ESRP 4.7 proposed)	Has the applicant identified projects in the region that may contribute to a cumulative impact on water-related aspects of the waste systems? (see ISG-026 Attachment 4)				
71	Hydrology		1	Alternatives Analysis ESRP 9.3)	Has the applicant provided reconnaissance data to characterize the hydrological impacts at the alternative sites?				
72	Alternatives (water-related issues only)		2	ESRP 9.4.1	The proposed heat dissipation system for each potential alternative, as follows, is necessary: 1. land-use requirements 2. water-use requirements 3. operating and maintenance experience for similar units 4. capital, maintenance, and operating costs 5. effect on generating efficiency 6. predicted thermal and physical effects (e.g., thermal plume and scouring) 7. predicted atmospheric effects (e.g., fogging, icing, and drift) 8. predicted operating noise levels 9. predicted aesthetic effect (e.g., visual plumes) 10. predicted recreational benefits.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
73	Alternatives (water-related issues only)		2	ESRP 9.4.2	<p>1. Is the following material found in the Application?</p> <p>For intake systems, the following information is required:</p> <ol style="list-style-type: none"> 1. sketches or preliminary designs and operational characteristics of alternative intake systems, showing the intake design and its relationship to water surface, bottom geometry, shoreline, and discharge structure 2. alternative pumping facilities, if proposed 3. alternative locations of the proposed intake system and pumping facility on the same waterbody 4. alternative procedures and schedules for intake defouling, including any use of defouling chemicals 5. descriptions and operational characteristics of any alternative trash racks, traveling screens, trash baskets, or fish-return systems 6. predicted physical impacts from hydrologic alternatives and impacts to aquatic ecosystems, including entrapment, impingement, and entrainment, for each alternative intake system 7. capital, maintenance, and operating costs for each alternative intake system and costs associated with system adaptation to the proposed site. 				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic 1. Is the following material found in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
74	Alternatives (Water-related issues only)		2	ESRP 9.4.2	For discharge systems, the following information is required: 1. sketches or preliminary designs and operational characteristics of alternative discharge systems showing the discharge design, its location with respect to the receiving waterbody, and its relationship to water surface, bottom geometry, intake structure, and shoreline 2. description of alternative discharge lines (or canals) from the heat-dissipation system to the receiving waterbody 3. description of alternative locations of the proposed discharge system on the same waterbody 4. estimated physical impacts from hydrologic alterations and impacts to aquatic biota for each alternative discharge system 5. capital, maintenance, and operating costs for each alternative discharge system and costs associated with system adaptation to the proposed site.				
75	Alternatives (Water-related issues only)		2	ESRP 9.4.2	For the water supply, the following information: 1. description of potential alternative sources of water and their availability, including location of water-supply source with respect to the facility site 2. economic and environmental cost data for water delivered from each alternative source.				
76	Alternatives (Water-related issues only)		2	ESRP 9.4.2	For water treatment, the following information is required: 1. description and purpose of alternative water-treatment systems for the circulating water system and the facility (service) water system 2. chemicals and additives (or mechanical treatment) to be used in each alternative water-treatment system 3. operating cycles for each alternative water-treatment system 4. capital, maintenance, and operating costs for each alternative water treatment system.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic 1. Is the following material found in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
77	Alternatives (water-related issues only)		2	ESRP 9.4.2	Capital, maintenance, and operating costs for the proposed intake system, discharge system, and water-treatment system, and water costs for the proposed water supply (see ISG-026 Attachment 6).				

**Table 1. Environmental Report Acceptance Review
Appendix G – Land Use/Transmission Line**

The purpose of this table is to provide the NRC with a deliverable for the Environmental Report Acceptance Review that will assist them in implementing Office Instruction NRO-REG-100. The PNNL version of Table 1 varies somewhat from Table 1 of Attachment D found in the office instruction. This table may be used either in addition to the Sufficiency Review Checklist or in lieu of the checklist. For all the items where there is a “1” listed in the priority column, the accident reviewer is the primary reviewer. In addition to the primary review responsibilities, the accident reviewer should also be looking at the ESRP sections shown in the “Review Interface” portion of each primary ESRP (listed as a “2” in the priority column).

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
1	Land Use/Transmission Line	Insert Team member name	1	ESRP 2.2.1	Acreages of land areas devoted to major uses within the site boundary.				
2	Land Use/Transmission Line		1	RG 4.2, sec. 2.1.1.2	Land Use map of the site keyed to the major land uses identified in the Land Use text.				
3	Land Use/Transmission Line		1	RG 4.2, Ch. 12; 10 CFR 51.45(d)	Identify and discuss applicable zoning.				
4	Land Use/Transmission Line		1	ESRP 2.2.1	Ownership of site. Indicate whether any lands are leased and to whom, for how long, and for what purpose.				
5	Land Use/Transmission Line		1	ESRP 2.2.1	Identification of land use plans and/or comprehensive plans that include the site and vicinity within their scope.				
6	Land Use/Transmission Line		1	ESRP 2.2.1	Egress limitations from the area surrounding the site.				
7	Land Use/Transmission Line		1	ESRP 2.2.1	Prime farmland, unique farmland, and farmland of national or statewide importance on the site.				
8	Land Use/Transmission Line		1	ESRP 2.2.1	Mineral resources (e.g., sand and gravel, coal, oil, natural gas, and ores) adjacent to or within the site boundary presently being exploited or of known commercial value.				
9	Land Use/Transmission Line		1	ESRP 2.2.1	Ownership of mineral resources (i.e., whether the mineral resources are owned by the surface or another landowner).				
10	Land Use/Transmission Line		2	ESRP 2.2.1	Floodplains on the site, preferably identified on a map.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
11	Land Use/ Transmission Line		1	ESRP 2.2.1	Special land-use classifications that would be impacted by the proposed facility (e.g., Native American or military reservations, wild and scenic rivers, State and national parks, national forests, designated coastal-zone areas, flood-plains, wildlife refuges, and wilderness areas).				
12	Land Use/ Transmission Line		1	ESRP 2.2.2	Proposed routes for corridors that will be used for construction of transmission lines from the station site to an interconnecting point(s) on the existing high-voltage transmission systems.				
13	Land Use/ Transmission Line		1	ESRP 2.2.2	Proposed routes and/or locations for other offsite facilities, including pipelines, access roads, heavy haul roads, barge facilities, and substations.				
14	Land Use/ Transmission Line		1	ESRP 2.2.2	Lengths and widths of any planned new transmission corridors or other linear features. If multiple widths, provide lengths and widths for each segment.				
15	Land Use/ Transmission Line		1	ESRP 2.2.2	Ownership details and any leases on land within the transmission line or other offsite corridors.				
16	Land Use/ Transmission Line		1	ESRP 2.2.2	Prime farmland, unique farmland, and farmland of national or statewide importance on proposed routes or locations for transmission lines or other offsite facilities.				
17	Land Use/ Transmission Line		1	ESRP 2.2.2	Mineral resources (e.g., sand and gravel, coal, oil, natural gas, and ores) presently being exploited or of known commercial value that are adjacent to or within proposed routes or locations for transmission lines or other offsite facilities.				
18	Land Use/ Transmission Line		1	ESRP 2.2.2	Ownership of mineral resources (i.e., whether the mineral resources are owned by the surface or another landowner) adjacent to or within proposed transmission line corridors or routes or locations for other proposed offsite facilities.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
19	Land Use/ Transmission Line		1	ESRP 2.2.2	Floodplains, preferably identified on a map, on or adjacent to proposed transmission line corridors or routes or locations for other proposed offsite facilities. .				
20	Land Use/ Transmission Line		1	ESRP 2.2.2	Special land-use classifications (e.g., Native American or military reservations, wild and scenic rivers, State and national parks, national forests, designated coastal-zone areas, flood-plains, wildlife refuges, and wilderness areas) on or adjacent to proposed transmission line corridors or routes or locations for other proposed offsite facilities..				
21	Land Use/ Transmission Line		2	ESRP 2.2.3	Maps showing major land uses within the region. Land use categories should be consistent with a widely recognized system such as that defined by the NRCS.				
22	Land Use/ Transmission Line		2	ESRP 2.2.3	Land areas devoted to major uses within the region.				
23	Land Use/ Transmission Line		2	ESRP 2.2.3	Principal agricultural products of the region, including commercial forest products.				
24	Land Use/ Transmission Line		2	ESRP 2.2.3	Maps showing the major transportation and utility networks within the region.				
25	Land Use/ Transmission Line		1	ESRP 2.2.3	Maps showing major public and trust land areas in the region.				
26	Land Use/ Transmission Line		1	ESRP 2.8	Descriptions of Federal actions associated with acquisition and/or use of the proposed site and transmission corridors or of any other offsite property needed for the proposed project.				
27	Land Use/ Transmission Line		1	ESRP 2.8	Descriptions of planned Federal projects that will be required either to provide an adequate source of facility cooling water or to ensure an adequate supply of cooling water over the operating lifetime of the facility.				
28	Land Use/ Transmission Line		1	ESRP 2.8	Descriptions of any other planned Federal projects or activities that must be completed as a condition of facility construction or operation.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
29	Land Use/ Transmission Line		1	ESRP 2.8	Federal agency plans or commitments that will result in significant new power purchases within the applicant’s service area that have been used to justify a need for power.				
30	Land Use/ Transmission Line		1	ESRP 2.8	Descriptions of planned Federal projects that are contingent on facility construction and operation.				
31	Land Use/ Transmission Line		2	ESRP 2.8	There are no technical deficiencies in support of land use for the sections mentioned in Review Interfaces in ESRP 2.8.				
32	Land Use/ Transmission Line		1	ESRP 3.7	Basic electrical design parameters, including transmission design voltage or voltages, line capacity, conductor type and configuration, spacing between phases, minimum conductor clearances to ground, maximum predicted electric-field strength(s) at 1 m above ground, the predicted electric-field strength(s) at the edge of the corridor in kV/m, and the design bases for these values.				
33	Land Use/ Transmission Line		1	ESRP 3.7	Predicted noise levels resulting from transmission-system operation.				
34	Land Use/ Transmission Line		1	ESRP 3.7	Basic structural design parameters, including illustrations and descriptions of towers, conductors, and other structures, with dimensions, materials, color, and finish.				
35	Land Use/ Transmission Line		1	ESRP 3.7	The applicant should provide siting data for all potential transmission line corridors identified by the applicant using topographic maps (as a rule, 7.5- or 15-minute scale) or aerial photographs showing the proposed corridor or corridors and all existing major high-voltage corridors in the region.				
36	Land Use/ Transmission Line		1	ESRP 3.7	Lengths, widths, and area of transmission line corridors, including modification and/or use of existing corridors and other facilities for the proposed project.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
37	Land Use/ Transmission Line		1	ESRP 3.7	General methods of transmission line construction (e.g., tower foundations, stringing, location of access roads, span length, and clearing of corridors).				
38	Land Use/ Transmission Line		1	ESRP 3.7	When available, proposed tower and substation locations.				
39	Land Use/ Transmission Line		1	ESRP 4.1.1	Has the applicant provided an overlay of the proposed construction footprint over the land use maps produced for ESRP 2.2.1? Does the overlay distinguish between permanent versus temporary elements?				
40	Land Use/ Transmission Line		1	ESRP 4.1.1	Has the applicant provided tables of land use impact data accompanying the overlay map indicated above? Do the data distinguish between permanent versus temporary elements?				
41	Land Use/ Transmission Line		1	ESRP 4.1.1	Has the applicant discussed how construction of project elements could conflict with existing and reasonably foreseeable adjacent or nearby land uses? Address any land ownership or lease conflicts.				
42	Land Use/ Transmission Line		1	ESRP 4.1.1	Has the applicant indicated how much if any of the following resources would be affected: prime farmland, unique farmland, farmland of statewide importance?				
43	Land Use/ Transmission Line		2	ESRP 4.1.1	Has the applicant addressed how current and future exploitation of mineral resources could be affected by construction of project facilities?				
44	Land Use/ Transmission Line		1	ESRP 4.1.1	Has the applicant provided the necessary information needed for a Coastal Zone Consistency Determination, if required?				
45	Land Use/ Transmission Line		2	ESRP 4.1.1	Has the applicant indicated how construction of project facilities could affect floodplains?				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
46	Land Use/ Transmission Line		1	ESRP 4.1.1	Has the applicant indicated how construction of project facilities could affect special land-use classifications (e.g., Native American or military reservations, wild and scenic rivers, State and national parks, national forests, designated coastal-zone areas, flood-plains, wildlife refuges, and wilderness areas).				
47	Land Use/ Transmission Line		1	ESRP 4.1.1	Has the applicant addressed transportation of construction materials to the site? For example, will rail service need to be established, restored, or otherwise reconditioned to accommodate the industrial loads expected during facility construction? If so, have these activities been characterized?				
48	Land Use/ Transmission Line		1	ESRP 4.1.1	Will dredging of barge slips or other channels be required to facilitate construction? If so, where will the dredge spoils be deposited, and what volume of spoil is projected?				
49	Land Use/ Transmission Line		1	ESRP 4.1.1	Will borrow pits be constructed (or expanded)? If so, what volumes of borrow will be transported and used in construction and what area of land might be affected?				
50	Land Use/ Transmission Line		2	ESRP 4.1.1	Will local roads or highways need widening or reconditioning to handle the expected loads?				
51	Land Use/ Transmission Line		2	ESRP 4.1.1	To what degree is the construction labor force expected to locate in the vicinity of the proposed facility? Will there be temporary housing communities during construction?				
52	Land Use/ Transmission Line		1	ESRP 4.1.1	Is the applicant seeking a Limited Work Authorization (LWA)? If so, the LWA would authorize ground-disturbing activities at the site to prepare for eventual reactor building construction. These activities should be clearly identified in the application as part of the Site Redress Plan, and the applicant should demonstrate that cooperation with relevant permitting agencies is underway or expected.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
53	Land Use/ Transmission Line		1	ESRP 4.1 10 CFR 51.45(c)	Is there a description of the environmental impacts of preconstruction activities related to land use at the site and an analysis of the cumulative impacts of the activities to be authorized by the COL in light of the preconstruction impacts, as explained in COL/ESP-ISG-4. The ISG and the supplement are available at http://www.nrc.gov/reading-rm/doc-collections/isg/col-app-design-cert.html on the NRC’s public website.				
54	Land Use/ Transmission Line		1	ESRP 4.1.2	Has the applicant indicated what highways, railroads, and utility corridors will be crossed by transmission lines and other offsite facilities?				
55	Land Use/ Transmission Line			ESRP 4.1.2	Has the applicant provided an overlay of the proposed routes or locations for transmission lines and other offsite facilities over the land use maps produced for ESRP 2.2.1? Does the overlay distinguish between permanent versus temporary elements?				
56	Land Use/ Transmission Line			ESRP 4.1.2	Has the applicant provided tables of land use impact data accompanying the overlay map indicated above? Do the data distinguish between permanent versus temporary elements?				
57	Land Use/ Transmission Line		1	ESRP 4.1.2	Has the applicant provided a description of transmission line construction techniques and the associated impact on land use?				
58	Land Use/ Transmission Line		1	ESRP 4.1.2	Has the applicant described planned control actions during construction that will restrict land use in the transmission line corridors and offsite areas? Are there any conflicts related to ownership or leases?				
59	Land Use/ Transmission Line		1	ESRP 4.1.2	Has the applicant indicated the zoning of lands crossed by routes for transmission lines or other offsite facilities or on or adjacent to locations for other offsite facilities?				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
60	Land Use/ Transmission Line		1	ESRP 4.1.2	Has the visual impact of constructing transmission lines and other offsite facilities or widening existing corridors been addressed?				
61	Land Use/ Transmission Line		1	ESRP 4.1.2	Has the applicant indicated how much if any of the following resources would be affected by transmission lines and other offsite facilities: prime farmland, unique farmland, farmland of statewide importance?				
62	Land Use/ Transmission Line		1	ESRP 4.1.2	Has the applicant addressed how current and future exploitation of mineral resources could be affected by construction of transmission lines and other offsite facilities?				
63	Land Use/ Transmission Line		1	ESRP 4.1.2	Has the applicant provided the necessary information needed concerning transmission lines and other offsite facilities for a Coastal Zone Consistency Determination, if required?				
64	Land Use/ Transmission Line		1	ESRP 4.1.2	Has the applicant indicated how construction of transmission lines and other offsite facilities could affect floodplains?				
65	Land Use/ Transmission Line		1	ESRP 4.1.2	Has the applicant indicated how construction of transmission lines and other offsite facilities could affect special land-use classifications (e.g., Native American or military reservations, wild and scenic rivers, State and national parks, national forests, designated coastal-zone areas, flood-plains, wildlife refuges, and wilderness areas).				
66	Land Use/ Transmission Line		2	ESRP 4.1.2	There are no technical deficiencies in support of land use for the sections mentioned in Review Interfaces in ESRP 4.1.2.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
67	Land Use/ Transmission Line		1	ESRP 5.1.1	Depending on the site and the level of applicable demographic research, land-use impacts could be projected to result from demand for new housing of operations workers. Only in rare cases would it be expected that enough research would be available to predict the degree that new housing would have land-use impacts in the vicinity. The applicant should acknowledge the operations impact on housing and similar impacts that may occur from outage operations.				
68	Land Use/ Transmission Line		1	ESRP 5.1.1	Potential agreement or conflict with local land-use plans should be addressed by the applicant. The applicant needs to show how the operation of a new nuclear unit either compliments or conflicts with existing land-use plans. Evidence of communication to this effect between the applicant and relevant agencies should be apparent.				
69	Land Use/ Transmission Line		1	ESRP 5.1.1	The land-use area also includes the impacts of salt drift from cooling tower steam plumes on crops and vegetation in the vicinity. The license renewal generic EIS provides clear metrics for determining impact significance in this area, and it should be referenced in this context by the applicant preparing the ER.				
70	Land Use/ Transmission Line		2	ESRP 5.1.1	There are no technical deficiencies in support of land use for the sections mentioned in Review Interfaces in ESRP 5.1.1.				
71	Land Use/ Transmission Line		1	ESRP 5.1.2	The applicant should provide a detailed characterization of typical transmission corridor maintenance activities.				
72	Land Use/ Transmission Line		1	ESRP 5.1.2	Has the applicant addressed the question of impacts from seasonal access to transmission corridors that cross land in agricultural or other productive use?				
73	Land Use/ Transmission Line			Alternative Site (ESRP 9.3)	Has the applicant provided reconnaissance data to characterize the land use and transmission line (and other offsite facilities) impacts for each of the alternative sites?				

**Table 1. Environmental Report Acceptance Review
Appendix H – Meteorology¹**

The purpose of this table is to provide the NRC with a deliverable for the Environmental Report Acceptance Review that will assist them in implementing Office Instruction NRO-REG-100. The PNNL version of Table 1 varies somewhat from Table 1 of Attachment D found in the office instruction. This table may be used either in addition to the Sufficiency Review Checklist or in lieu of the checklist. For all the items where there is a “1” listed in the priority column, the accident reviewer is the primary reviewer. In addition to the primary review responsibilities, the accident reviewer should also be looking at the ESRP sections shown in the “Review Interface” portion of each primary ESRP (listed as a “2” in the priority column).

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
1	Meteorology	Insert Team member name	2	ESRP 2.1	Is the plant description adequate for a meteorological analysis (see ESRP 2.1)?				
2	Meteorology		1	ESRP 2.7	A description of the general climate of the region with respect to the type of air masses, synoptic features, general air flow patterns, temperature and humidity characteristics, precipitation, and relationships between synoptic and mesoscale conditions, with an emphasis on conditions that would affect air quality and/or dispersion.				
3	Meteorology		1	ESRP 2.7	A description of the regional air quality, including nonattainment or maintenance areas.				
4				40 CFR Part 81, 40 CFR Part 93	If located in nonattainment or maintenance area, construction emission estimates and operation emission estimates necessary to conduct a GCD. NRC-authorized construction emissions must be separated from any total construction/preconstruction emission estimates.				
5	Meteorology		1	ESRP 2.7	A description of local severe weather phenomena and its frequency and local conditions that would affect air quality and/or dispersion.				

⁽¹⁾ Subject Matter Experts may want to review RG 1.23, “Meteorological Monitoring Programs for Nuclear Power Plants” and NUREG-1555/2.7, “Meteorology and Air Quality” prior to completing this table.

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
6	Meteorology		1	ESRP 2.7	Monthly and annual air temperature and dewpoint temperature summaries, including averages, extremes, and diurnal range, and whether these extremes would affect air quality and/or dispersion.				
7	Meteorology		1	ESRP 2.7	Monthly and annual summaries, including natural variability, occurrences of heavy fog, and appropriate summaries of other relevant parameters to support the description of impacts resulting from the operation of a closed-cycle heat dissipation system.				
8	Meteorology		1	ESRP 2.7	Estimated monthly mixing-height data, including frequency and duration (persistence) of inversion conditions and the methods used to provide the estimates, and an assessment of these values relative to their effect on air quality and/or dispersion.				
9	Meteorology		1	ESRP 2.7	Monthly and annual summaries of atmospheric stability.				
10	Meteorology		1	ESRP 2.7	A description or reference to models and assumptions used to determine χ/Q and relative deposition (D/Q).				
11	Meteorology		1	ESRP 2.7	Short- and long-term diffusion estimates of χ/Q and/or D/Q and the period of onsite meteorological data used in the calculations.				
12	Meteorology		2	ESRPs 3.4.1 and 3.4.2	Is the description of the cooling system (and relevant components) adequate for use in determining the potential impacts of heat dissipation on the atmosphere (this material is needed for ESRPs 3.4.1 and 3.4.2)?				
13	Meteorology		2	ESRP 3.5	Are the release points for radioactive effluents (to be used in atmospheric transport and diffusion calculations) adequately described (this material is needed for ESRP 3.5)?				
14	Meteorology		2	ESRP 3.6.3	Are the release points for non-radiological emissions (to be used in atmospheric transport and diffusion calculations related to plant construction and operation, including vehicle emissions) adequately described (needed for ESRP 3.6.3)?				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
15	Meteorology		1	ESRPs 4.4.1, 5.3.2.1, and 5.3.3.1	1. Is the following material found and cited in the Application? Is the meteorological information suitable to provide estimates of the impact of construction activity (needed for ESRP 4.4.1), plant operation (for ESRP 5.3.2.1), and heat dissipation system effects (for ESRP 5.3.3.1) on the atmosphere and air quality?				
16	Meteorology		2	ESRPs 5.4.1 and 5.4.2	Are the locations of the nearest receptors in each 22.5-degree sector for the transport and diffusion calculations clearly identified (for ESRPs 5.4.1 and 5.4.2)? Is enough information provided to allow staff to evaluate the concentrations and deposition values at these locations?				
17	Meteorology		1	ESRP 6.2	Is the information sufficient to provide an assessment of the adequacy of air-sampling locations? Is a map provided showing the location of these stations (needed for ESRP 6.2)?				
18	Meteorology		1	ESRP 6.4 and 6.7	Is the information provided adequate to assess the meteorological monitoring? For example, does it include a description of the onsite meteorological measurement program, including tower location and siting, location of any nearby obstructions or structures, and the local topography?				
19	Meteorology		1	ESRP 6.4 and 6.7	Discussion of the meteorological measurements, including instrumentation used, instrument elevation above grade and siting on the tower, instrument accuracy, instrument performance specifications, and instrument calibration/maintenance procedures. Can the criteria of RG 1.23 be assessed?				
20	Meteorology		1	ESRPs 6.4 and 6.7	Discussion of meteorological data recording systems and analysis procedures, including data reduction (averaging) techniques and quality control.				
21	Meteorology		2	ESRPs 7.1 and 7.2	Is the meteorological data adequate to analyze and evaluate the effects of plant accidents involving radioactive material (needed for ESRPs 7.1 and 7.2)?				
22	Meteorology		2	ESRP 9.4.1	Is the meteorological data adequate to evaluate the heat dissipation of alternative systems (for ESRP 9.4.1)?				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	<p align="center">Sufficiency Review Question</p> <p align="center">1. Is the following material found and cited in the Application?</p>	<p align="center">2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)</p>	<p align="center">3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)</p>	<p align="center">4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)</p>	<p align="center">5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.</p>
23	Meteorology		1	10 CFR 51.45(c)	A description the environmental impacts of pre-construction activities related to meteorology and air quality at the site and an analysis of the cumulative impacts of the activities to be authorized by the COL in light of the preconstruction impacts, as explained in COL/ESP-ISG-4. The ISG and the supplement are available at http://www.nrc.gov/reading-rm/doc-collections/isg/col-app-design-cert.html on the NRC’s public website.				
24	Meteorology		1	Alternative Site (ESRP 9.3)	Has the applicant provided reconnaissance data to characterize the meteorological impacts at the alternative sites?				
25	Meteorology		1	ISG-026 and ESRP Appendix (currently in development)	Reactor-specific and site-specific GHG emission estimates for different stages of the complete plant lifecycle, or use of generic GHG footprint.				
26			2	ESRP Appendix (currently in development)	Climate change impacts on air quality and meteorology due to new baseline as a result of climate change can be performed without additional applicant information.				

**Table 1. Environmental Report Acceptance Review
Appendix I – Need for Power and Benefit-Cost Balance**

The purpose of this table is to provide the NRC with a deliverable for the Environmental Report Acceptance Review that will assist them in implementing Office Instruction NRO-REG-100. The PNNL version of Table 1 varies somewhat from Table 1 of Attachment D found in the office instruction. This table may be used either in addition to the Sufficiency Review Checklist or in lieu of the checklist. For all the items where there is a “1” listed in the priority column, the accident reviewer is the primary reviewer. In addition to the primary review responsibilities, the accident reviewer should also be looking at the ESRP sections shown in the “Review Interface” portion of each primary ESRP (listed as a “2” in the priority column).

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
1	Need for Power and Benefit-Cost Balance	Insert Team member name(s)	1	ESRP 8.1 (Need for Power)	Description of the relevant service area(s), including 1. a map of the service area showing the location of the proposed facility relative to the service area, 2. how the output from the facility will be connected to the transmission and distribution grid system, 3. transmission and inertia, including capacity, constraints within the service area, 4. new transmission capacity (if required).				
2	Need for Power and Benefit-Cost Balance		1	ESRP 8.1 (Need for Power)	Discussion of the dispatch characteristics planned for the proposed unit(s), (e.g., baseload, intermediate, etc.)				
3	Need for Power and Benefit-Cost Balance		1	ESRP 8.1 (Need for Power)	Description of the market structure within which the applicant operates, including a discussion of any unique characteristic of the market structure (e.g., rate-based utility, merchant generator, or some combination of the two structures).				
4	Need for Power and Benefit-Cost Balance		1	ESRP 8.1 (Need for Power)	Discussion of any state, regional, or market-based regulatory requirements that would affect the production, distribution, and consumption of electricity (e.g., resource portfolio standards, impacts from known or potential changes to energy-efficiency standards, and potential impacts from changes to Federal and State environmental policies).				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	<p style="text-align: center;">Sufficiency Review Question</p> <p style="text-align: center;">1. Is the following material found and cited in the Application?</p>	<p style="text-align: center;">2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)</p>	<p style="text-align: center;">3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)</p>	<p style="text-align: center;">4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)</p>	<p style="text-align: center;">5. Remarks/Notes:</p> <p style="text-align: center;">If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.</p>
5	Need for Power and Benefit-Cost Balance		1	ESRP 8.1 (Need for Power)	Number and types of customers and major electrical load centers in the relevant service area.				
6	Need for Power and Benefit-Cost Balance		1	ESRP 8.1 (Need for Power)	System factors that are unique to the power system (e.g., power pool agreements), including status of retail deregulation, operating regional transmission organizations, and associated power markets.				
7	Need for Power and Benefit-Cost Balance		1	ESRP 8.2.1 (Need for Power)	Methodology, assumptions, and information sources used to develop the forecasts of electricity consumption, peak- and base-load demand, and forecasted load factor.				
8	Need for Power and Benefit-Cost Balance		1	ESRP 8.2.1 (Need for Power)	Chart or table of historical, current year, and projected system peak demand (summer or winter, whichever is greater, disaggregated by dispatch type and by sector); and historic, projected, and/or required reserve margin requirements for the relevant service area(s) to at least three years after the commencement of full commercial operation of the proposed project (i.e., the “analytical year”).				
9	Need for Power and Benefit-Cost Balance		1	ESRP 8.2.1 (Need for Power)	Results of any independent assessments of the forecasted electricity consumption and peak-load demand, along with confirmation the independent assessment meets the NRC’s four acceptance criteria: <ul style="list-style-type: none"> • systematic • comprehensive • subject to confirmation • responsive to forecasting uncertainty. 				
10	Need for Power and Benefit-Cost Balance		1	ESRP 8.2.1 (Need for Power)	Comparison of forecasted electricity consumption and peak-load demand to other independent forecasts and reasons for significant differences.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
11	Need for Power and Benefit-Cost Balance		1	ESRP 8.2.1 (Need for Power)	Identification of known or expected customers (or firm power sales) outside the relevant service area for the power to be supplied by the proposed facility, and any signed or likely power sales agreements for the purchase of the power. [Note: This information may be business sensitive and/or proprietary.]				
12	Need for Power and Benefit-Cost Balance		1	ESRP 8.2.2 (Need for Power)	Discussion of historical and projected economic factors, weather, price of electricity, energy mix (including energy-efficiency and fuel-switching effects), and demographic/population trends that affect electricity demand.				
13	Need for Power and Benefit-Cost Balance		1	ESRP 8.2.2 (Need for Power)	Methodology and information sources used to develop the forecast of economic, weather, price of electricity, energy mix, and demographic/population trends.				
14	Need for Power and Benefit-Cost Balance		1	ESRP 8.3 (Need for Power)	Chart or table of the historical and projected inventory of electricity generating units in the relevant service area, disaggregated by dispatch and fuel type, including a discussion of factors driving any change in the historic distribution of generating units by dispatch or fuel type in the analytical year.				
15	Need for Power and Benefit-Cost Balance		1	ESRP 8.3 (Need for Power)	Description of the methodology, assumptions, and information sources used to develop the applicant’s forecast of future changes (additions, retirements, uprates) to the inventory of electricity generating units.				
16	Need for Power and Benefit-Cost Balance			ESRP 8.3 (Need for Power)	Identification of existing power facilities that serve the relevant service area and their generating capacity whose retirement has been announced or is anticipated in the analytical year.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	<p style="text-align: center;">Sufficiency Review Question</p> <p>1. Is the following material found and cited in the Application?</p>	<p>2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)</p>	<p>3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)</p>	<p>4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)</p>	<p>5. Remarks/Notes:</p> <p>If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.</p>
17	Need for Power and Benefit-Cost Balance		1	ESRP 8.3 (Need for Power)	Identification of proposed new facilities that will serve the relevant service area and their generating capacity expected to start operation in the analytical year [Note: This information may be business sensitive, proprietary, or non-binding (e.g. proposed new capacity may be a placeholder value so meet minimum reserve margin requirements)].				
18	Need for Power and Benefit-Cost Balance		1	ESRP 8.3 (Need for Power)	Description of planned power purchases and sales (including the duration of contracts, distinguishing on- and off-peak sales) whether any planned or proposed transmission construction could significantly impact these purchases and sales. . [Note: This information may be business sensitive and/or proprietary.]				
19	Need for Power and Benefit-Cost Balance		1	ESRP 8.4 (Need for Power)	A summary chart or table including historic and future total demand, baseload demand, total capacity, and baseload capacity				
20	Need for Power and Benefit-Cost Balance		1	ESRP 8.4 (Need for Power)	<p>Discussion of the methodology and approach used by the applicant to arrive at the determination of the need for power by at least one of the following:</p> <ul style="list-style-type: none"> • Demonstration the applicant has received a formal certification of public need for the proposed project • Demonstration that forecasted peak load demand in the analytical year is greater than the forecasted capacity of generating units in the analytical year • Demonstration that the forecasted baseload demand in the analytical year is greater than the forecasted baseload capacity of generating units in the analytical year • Demonstration of how the proposed project can ensure its participation in the electricity market at a level consistent with baseload capacity factors. 				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	<p style="text-align: center;">Sufficiency Review Question</p> <p>1. Is the following material found and cited in the Application?</p>	<p>2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)</p>	<p>3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)</p>	<p>4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)</p>	<p>5. Remarks/Notes:</p> <p>If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.</p>
21	Need for Power and Benefit-Cost Balance		1	ESRP 10.4.1 (Benefit-Cost)	The annual average electrical-energy generation (in kWh)				
22	Need for Power and Benefit-Cost Balance		1	ESRP 10.4.1 (Benefit-Cost)	Data on other benefits, quantified and monetized to the extent possible (e.g., annual Federal, State, and local tax payments, number and type of jobs, and total annual wages paid). [ESRPs 4.4.2 and 5.8.2]				
23	Need for Power and Benefit-Cost Balance		1	ESRP 10.4.1 (Benefit-Cost)	Description of unquantifiable or nonmonetary benefits (e.g., fuel diversity or portfolio diversity).				
24	Need for Power and Benefit-Cost Balance		1	ESRP 10.4.2 (Benefit-Cost)	Estimates of costs, including <ul style="list-style-type: none"> • the overnight cost of the project, • financing and other capital costs • annual operating and maintenance costs, with separate discussions for decommissioning, waste disposal, and fuel costs, and • any other internal costs of the proposed facility. 				
25	Need for Power and Benefit-Cost Balance		1	ESRP 10.4.2 (Benefit-Cost)	A tabular listing of the costs of each environmental category discussed in the ER (e.g. land use, aquatic and terrestrial ecology, socioeconomics (disaggregated by category), etc.).				

**Table 1. Environmental Report Acceptance Review
Appendix J – Radiological Health**

The purpose of this table is to provide the NRC with a deliverable for the Environmental Report Acceptance Review that will assist them in implementing Office Instruction NRO-REG-100. The PNNL version of Table 1 varies somewhat from Table 1 of Attachment D found in the office instruction. This table may be used either in addition to the Sufficiency Review Checklist or in lieu of the checklist. For all the items where there is a “1” listed in the priority column, the accident reviewer is the primary reviewer. In addition to the primary review responsibilities, the accident reviewer should also be looking at the ESRP sections shown in the “Review Interface” portion of each primary ESRP (listed as a “2” in the priority column).

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
1	Radiological Health	Insert Team member name	1	ESRP 3.5	Sources of radioactive liquid and gaseous waste within the facility.				
2	Radiological Health		1	ESRP 3.5	Description of liquid and gaseous radioactive waste management and effluent control systems. Or provide reference to location of the information in FSAR				
3	Radiological Health		1	ESRP 3.5	Identification of principal release points for radioactive materials to the environment.				
4	Radiological Health		1	ESRP 3.5	Identification of direct radiation sources within or onsite out-of-plant as solid waste (e.g., independent fuel storage).				
5	Radiological Health		1	ESRP 3.5	Information relevant to estimating radioactive liquid and gaseous effluents.				
6	Radiological Health		1	ESRP 3.5	For ESP reviews, additional information from the applicant is needed to further define the radiological effluent information submitted pursuant to 10 CFR 52.17(a)(1)(iv).				
7	Radiological Health		2	ESRP 3.5	There are no technical deficiencies regarding waste systems for the sections mentioned in the Review Interfaces in ESRP 3.5.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
8	Radiological Health		1	ESRP 4.5	The physical layout of the site, including the location and orientation of onsite or adjacent nuclear fuel cycle facilities that are expected to be operating during construction of the proposed facility.				
9	Radiological Health		1	ESRP4.5	The location and characteristics of external radiation sources and radioactive effluent emission sources at nearby facilities.				
10	Radiological Health		1	ESRP 4.5	Measured or estimated radiation dose rates and airborne radioactivity concentrations at the construction site.				
11	Radiological Health		1	ESRP 4.5	The number and locations of construction workers who will be exposed to the radiation sources at the site and the amount of time per year that they will spend at those locations.				
12	Radiological Health		1	ESRP 4.5	The estimated annual collective dose to the construction work force, including models assumptions and input data used for the dose estimates.				
13	Radiological Health			ESRP 4.5	There are no technical deficiencies regarding waste systems for the sections mentioned in the Review Interfaces in ESRP 4.5.				
14	Radiological Health		1	ESRP 5.4.1	Distances from the proposed reactor to the following points or areas for each of the 22.5-degree radial sectors centered on the 16 cardinal compass directions: 1. nearest site boundary 2. to a distance of 8 km (5 mi), each receptor and its location for the nearest residence, milk cow, milk goat, meat animal, and vegetable garden larger than 50 m ² 3. if the applicant proposes elevated releases of radioactive effluents as defined in RG 1.111, the location of all milk cows and goats, meat animals, residences, and vegetable gardens larger than 50 m ² out to a distance of 5 km (3 mi).				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a "No" for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a "Yes" for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
15	Radiological Health		1	ESRP 5.4.1	For the applicable locations noted above, the grazing seasons and fraction of daily intake of cows, meat animals, and milk goats derived from pasture or fresh forage during the grazing season.				
16	Radiological Health		1	ESRP 5.4.1	Fraction of the year that leafy vegetables are grown and the average absolute humidity in g/m ³ during the growing season.				
17	Radiological Health		1	ESRP 5.4.1	The nearest present and known future locations from which an individual can obtain aquatic food and/or drinking water.				
18	Radiological Health		1	ESRP 5.4.1	The nearest present and known future shoreline areas that an individual can use for recreational purposes.				
19	Radiological Health		1	ESRP 5.4.1	For the two locations noted immediately above, the transit time of each facility discharge stream containing liquid radwaste discharge from the point at which the stream enters an unrestricted area to the identified location, and the estimated stream dilution at that location.				
20	Radiological Health		1	ESRP 5.4.1	For each liquid radwaste discharge, the transit time from input to a facility discharge stream to the point at which the stream enters an unrestricted area, and the stream discharge in m ³ /sec.				
21	Radiological Health		1	ESRP 5.4.1	The following distributional data for each of the 22.5-degree radial sectors centered on the 16 cardinal compass directions for radial distances of 2, 4, 6, 8, 10, 20, 40, 60, and 80 km (1.2, 2.5, 3.7, 5, 6.2, 12, 25, 27, and 50 mi) from the reactor: 1. projected population for five years from the time of the licensing action under consideration 2. present annual meat production (kg/yr) 3. present annual milk production (L/yr) 4. present annual vegetable production (kg/yr) 5. estimate of direct radiation doses from sources within the site.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
22	Radiological Health		1	ESRP 5.4.1	The present commercial fish and invertebrate catch (in kg/yr) from waters within 80 km (50 mi) downstream (or 80-km [50-mi] radius for lake or coastal sites) of the facility radwaste discharge; major catch locations, their distance from the facility radwaste discharge, and the amount caught within 80 km (50 mi) of the facility that is consumed; transit time from the point at which the discharge stream enters an unrestricted area to each major catch location, the estimated dilution at each location, and the basis for calculating transit time and dilution.				
23	Radiological Health		1	ESRP 5.4.1	Present and known future drinking-water intake locations within 80 km (50 mi) of the facility radwaste discharge (downstream or radius), the transit time and estimated dilution at each major location, the basis for calculating transit time and dilution, and the populations served or the daily water consumption at each location.				
24	Radiological Health		1	ESRP 5.4.1	The irrigation rate (L/m ² /mo), crop yield (kg/m ²), annual production (kg/yr), and growing period (days) for irrigated land using water withdrawn within 80 km (50 mi) of the facility radwaste discharge (downstream or radius) when crop production has the potential for contributing 10% or more to individual or population doses because of liquid effluents; the crop type and its use (e.g., human consumption and meat animals), total crop production (by type) within the 80-km (50-mi) distance, and the amounts consumed within an 80-km (50-mi) radius of the facility; transit time from the point at which the discharge stream enters an unrestricted area to the points of withdrawal, estimated dilution at each withdrawal point, and the bases for calculating transit times and dilution factors.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a "No" for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a "Yes" for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
25	Radiological Health		1	ESRP 5.4.1	Unusual animals, plants, agricultural practices, game harvests, or food processing operations having the potential to contribute 10% or more to either individual or population doses in areas affected by liquid effluents, and food-processing operations involving large quantities of water.				
26	Radiological Health			ESRP 5.4.1	There are no technical deficiencies regarding waste systems for the sections mentioned in the Review Interfaces in ESRP 5.4.1.				
27	Radiological Health		1	ESRP 5.4.2	Information related to exposure pathways, including 1. receptor locations 2. population distribution 3. meteorological dispersion data 4. hydrological dilution data.				
28	Radiological Health		1	ESRP 5.4.2	Gaseous and liquid effluent data.				
29	Radiological Health		1	ESRP 5.4.2	Exposure rates associated with onsite out-of-plant storage of solid waste.				
30	Radiological Health		1	ESRP 5.4.2	Applicant calculated dose data.				
31	Radiological Health		1	ESRP 5.4.2	Occupational radiation dose estimates.				
32	Radiological Health			ESRP 5.4.2	There are no technical deficiencies regarding waste systems for the sections mentioned in the Review Interfaces in ESRP 5.4.2				
33	Radiological Health		1	ESRP 5.4.3	Data on water use to support the analysis of public dose from waterborne sources.				
34	Radiological Health		1	ESRP 5.4.3	Estimated individual and collective doses.				
35	Radiological Health		1	ESRP 5.4.3	Maximum site-specific doses to members of the public.				
36	Radiological Health		1	ESRP 5.4.3	Dose consequences and health effects associated with normal operational effluents.				
37	Radiological Health		1	ESRP 5.4.3	Summary of the maximum individual and collective dose estimates.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a "No" for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a "Yes" for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
38	Radiological Health		1	ESRP 5.4.3	Radiation dose data, including 1. maximum individual doses from liquid effluents 2. maximum individual doses from gaseous effluents 3. maximum individual doses from direct radiation sources 4. collective doses to the population within 80 km (50 mi) of the facility 5. occupational collective doses.				
39	Radiological Health		1	ESRP 5.4.3	Natural radiation doses generally applicable to the site.				
40	Radiological Health			ESRP 5.4.3	There are no technical deficiencies regarding waste systems for the sections mentioned in the Review Interfaces in ESRP 5.4.3.				
41	Radiological Health		1	ESRP 5.4.4	A list of the biota to be considered in this evaluation.				
42	Radiological Health		1	ESRP 5.4.4	Site-specific pathways for radiation exposure to biota.				
43	Radiological Health		1	ESRP 5.4.4	Doses to the maximally exposed individual.				
44	Radiological Health			ESRP 5.4.4	There are no technical deficiencies regarding waste systems for the sections mentioned in the Review Interfaces in ESRP 5.4.4.				
45	Radiological Health		1	ESRP 6.2	A map or aerial photograph of the site vicinity with proposed monitoring and sampling locations identified and indicating the medium sampled at each location. The map or photograph should be suitable to show distance and direction of each location from the facility, particularly with regard to the effluent release points.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a "No" for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a "Yes" for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
46	Radiological Health		1	ESRP 6.2	A description of the proposed monitoring program, including: 1. number and location of sample collection points and measuring devices and the pathway sampled or measured 2. sample size, sample collection frequency, and sampling duration 3. type and frequency of analysis 4. general types of sample collection and measuring equipment 5. lower limit of detection for each analysis 6. the approximate date on which the proposed program will be effective 7. the quality-assurance program for radiological environmental monitoring programs.				
47	Radiological Health		1	ESRP 6.2	A discussion justifying the choice of sample sites, analyses, sampling frequencies, sampling and measuring durations, sample sizes, and lower limits of detection.				
48	Radiological Health		2	ESRP 6.2	There are no technical deficiencies regarding radiological health for the sections mentioned in the Review Interfaces in ESRP 6.2.				
49	Radiological Health		1	10 CFR 51.45(c)	A description the environmental impacts of preconstruction activities related to radiological health at the site and an analysis of the cumulative impacts of the activities to be authorized by the COL in light of the preconstruction impacts, as explained in COL/ESP-ISG-4. The ISG and the supplement are available at http://www.nrc.gov/reading-rm/doc-collections/isg/col-app-design-cert.html on the NRC's public website.				
50	Radiological Health		1	Cumulative Impacts (ISG-26)	Has the applicant considered activities of other agencies that have occurred or will occur in the region that may contribute to a cumulative impact on radiological health?				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
51	Radiological Health		1	Cumulative Impacts (ISG-26)	Has the applicant identified projects in the region that may contribute to a cumulative impact on radiological health?				
52	Radiological Health		1	RG 4.2, Rev 2: Page 5-3	Information concerning any cumulative buildup of radionuclides in the environment, such as in sediments, should be presented and discussed.				

**Table 1. Environmental Report Acceptance Review
Appendix J1 – Non-Radiological Human Health**

The purpose of this table is to provide the NRC with a deliverable for the Environmental Report Acceptance Review that will assist them in implementing Office Instruction NRO-REG-100. The PNNL version of Table 1 varies somewhat from Table 1 of Attachment D found in the office instruction. This table may be used either in addition to the Sufficiency Review Checklist or in lieu of the checklist. For all the items where there is a “1” listed in the priority column, the accident reviewer is the primary reviewer. In addition to the primary review responsibilities, the accident reviewer should also be looking at the ESRP sections shown in the “Review Interface” portion of each primary ESRP (listed as a “2” in the priority column).

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
1	Non-radiological Human Health	Insert Team member name(s)	1	ESRP 3.6.3	Estimates of gaseous effluents (e.g., from diesel engines, gas turbines, heating plants, and incinerators) released during facility operation, the location and elevation of release points, the frequency of their release and their treatment before release, and the total quantity of SO _x , NO _x , volatile organic compounds, and suspended particulates to be discharged annually. (Coordinate with the air quality SME for air-related human health issues.)				
2	Non-radiological Human Health		1	ESRP 3.6.3	Applicable Federal, State, and tribal regional standards concerning atmospheric emissions from consultation with Federal, State, regional, local, and affected Native American tribal agencies.				
3	Non-radiological Human Health		1	ESRP 3.6.3	Information concerning nonradioactive wastes not considered in ESRPs 3.6.1 and 3.6.2, such as laboratory wastes, storm drainage, trash, hazardous wastes, and debris from bars or screens on the cooling water intake. The description should include estimates of the quantities of wastes, their pollutant concentrations at points of release as appropriate to the system, and other relevant data. (Coordinate with the aquatic ecology, hydrology, and waste systems SMEs for water-related waste issues.)				
4	Non-radiological Human Health		1	ESRP 3.6.3	Procedures for any offsite disposal of wastes. (Coordinate with the waste systems SME- on water- and land-related waste issues.)				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
5	Non-radiological Human Health		1	ESRP 3.6.3	Procedures by which all effluents will be treated, controlled, and discharged to meet State and EPA effluent limitation guidelines and new source performance standards. (Coordinate with the hydrology and waste systems SMEs on water-related waste issues.)				
6	Non-radiological Human Health		1	5.3.4	Has the applicant evaluated whether the potential exists for a detrimental impact from the thermal discharge on the concentration of etiological agents in the receiving waters?				
7	Non-radiological Human Health		1	5.3.4	Has the applicant consulted with the State’s public health department to adequately characterize the state’s level of concern with regard to etiological agents in the receiving waters?				
8	Non-radiological Human Health		1	5.3.4	Has the applicant discussed the proximity of recreational activities to the thermal discharge into the receiving waters? What is the likelihood of interaction by members of the public within the thermal influence of the operating facility that could be exposed to etiological agents in the receiving waters?				
9	Non-radiological Human Health		1	5.3.4	Has the applicant discussed the identification of etiological agents or diseases of concern for the plant proposed and the region where the plant is to be built? What is the incidence of infection in the region of influence for etiological agents in the receiving waters?				
10	Non-radiological Human Health		1	5.3.4	Has the applicant discussed procedures for protecting workers from exposure to etiological agents while working inside or within the maximum deposition area of the cooling towers?				
11	Non-radiological Human Health		1	5.3.4	Has the applicant identified components of the plant’s cooling system capable of contributing to offsite noise levels? (Coordinate with the socioeconomics SME and any other noise experts for noise-related health issues.)				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
12	Non-radiological Human Health		1	5.3.4	Has the applicant measured noise emission levels from the plant’s cooling system to the site boundary, and to the nearest offsite residence?				
13	Non-radiological Human Health		1	5.3.4	Has the applicant made a comparison of noise emission levels from the plant’s cooling system to Federal and State standards for noise emissions? Are there any local (e.g., county or city) ordinances for noise for the proposed site?				
14	Non-radiological Human Health		1	5.3.4 III (1)	For an application with a plant that does not utilize a cooling system with cooling pond(s), lake(s), canal(s), or uses once-through cooling system(s) with discharge to a river with a flow rate above $9 \times 10^{10} \text{ m}^3/\text{yr}$ ($3.15 \times 10^{12} \text{ ft}^3/\text{yr}$): Has the applicant provided a statement why their cooling system has a limited potential for causing an increase in thermophilic microorganisms that would have a deleterious effect on public health? (Coordinate with the hydrology and aquatic ecology SMEs.)				
15	Non-radiological Human Health			5.3.4 III (2, 3)	For an application with a plant that utilizes a cooling system with cooling pond(s), lake(s), canal(s), or uses once-through cooling system(s) with discharge to a river with a flow rate below $9 \times 10^{10} \text{ m}^3/\text{yr}$ ($3.15 \times 10^{12} \text{ ft}^3/\text{yr}$): Has the applicant consulted with the local State Public Health Department and reviewed records associated with waterborne disease outbreaks in the region? If there is a potential that thermal discharges from the plant would increase the number of deleterious thermophilic microorganisms to levels that could cause a public health problem, has the applicant considered mitigative measures to minimize the potential impacts? (Coordinate with the hydrology and aquatic ecology SMEs.)				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
16	Non-radiological Human Health		1	ESRP 5.5.1	Descriptions of nonradioactive waste systems, including size and location of disposal sites, quantities, composition, and frequency of waste discharges (e.g., burial, combustion, and evaporation) to water, land, and air. (Coordinate with the air quality and hydrology SMEs on air and water-related aspects.)				
17	Non-radiological Human Health		1	ESRP 5.5.1	For discharges to land (other than at licensed commercial waste disposal sites), size and location of disposal sites, quantity and composition of wastes, and method of disposal (e.g., burial, combustion, and evaporation).				
18	Non-radiological Human Health		1	ESRP 5.5.1	Plans for ultimate treatment and/or restoration of retired disposal sites (other than licensed commercial sites).				
19	Non-radiological Human Health		1	ESRP 5.5.1	Applicable Federal, State, regional, local, and affected Native American tribal criteria or standards for solid-waste disposal to land areas.				
20	Non-radiological Human Health		1	ESRP 5.5.2	Descriptions of systems that create mixed wastes, including quantities of waste produced. (Coordinate with the hydrology SME for water-related aspects.)				
21	Non-radiological Human Health		1	ESRP 5.5.2	Anticipated disposal plans for the mixed wastes (i.e., disposal at a mixed waste disposal facility, shipment to a treatment facility, or storage onsite). (Coordinate with the waste systems SME.)				
22	Non-radiological Human Health		1	ESRP 5.5.2	Estimated environmental impacts, including health effects resulting from exposure to the chemical constituents estimated to be received by workers as a result of mixed-waste testing and storage. (Coordinate with waste systems SMEs.)				
23	Non-radiological Human Health		1	ESRP 5.5.2	Is there a waste minimization plan that identifies process changes that can be made to reduce or eliminate mixed wastes? (Coordinate with the waste systems SME.)				
24	Non-radiological Human Health		1	5.6.3	Has the applicant discussed predicted noise levels from the power-transmission system? (Coordinate with the socioeconomics SME and other noise experts.)				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
25	Non-radiological Human Health		1	5.6.3	Has the applicant made a comparison of noise emission levels from the power-transmission system to Federal and State standards for noise emissions? Are there any local (e.g., county or city) ordinances for noise for the proposed site? Has the applicant discussed the potential noise impacts from the power-transmission system to members of the public? (Coordinate with the socioeconomics and ecology SMEs.)				
26	Non-radiological Human Health		1	5.6.3	Has the applicant discussed the potential adverse impacts from electrostatic effects (electric shock), electromagnetic field effects, and corona discharges from the power-transmission system?				
27	Non-radiological Human Health		1	5.6.3	Have design parameters been considered for the power-transmission system to reduce electric shock potentials to stationary vehicles (e.g., school buses and tractor trailers)?				
28	Non-radiological Human Health		1	5.6.3	Has the applicant discussed if there are ozone impacts from the power-transmission system? (Coordinate with the air quality SME)				
29	Non-radiological Human Health		1	5.6.3	Has the applicant discussed if the power-transmission system meets conformance with the National Electrical Safety Code concerning steady-state currents?				
30	Non-radiological Human Health		1	Cumulative Impacts (ESRP 4.7 proposed)	Has the applicant identified other industrial activities that have occurred or will occur in the project area that may contribute to a cumulative impact with etiological agents?				
31	Non-radiological Human Health		1	Cumulative Impacts (ESRP 4.7 proposed)	Has the applicant identified other industrial activities that have occurred or will occur in the project area that may contribute to a cumulative impact associated with noise from plant operation?				
32	Non-radiological Human Health		2	5.3.4	There are no technical deficiencies in support of resources for evaluating non-radiological human health sections mentioned in Review Interfaces in ESRP 5.3.4.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a "No" for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a "Yes" for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
33	Non-radiological Human Health		2	5.6.3	There are no technical deficiencies in support of resources for evaluating sections concerning impacts to members of the public from proposed transmission system mentioned in Review Interfaces in ESRP 5.6.3?				
34	Non-radiological Human Health		1	10 CFR 51.45(c)	A description the environmental impacts of preconstruction activities related to non-radiological human health at the site and an analysis of the cumulative impacts of the activities to be authorized by the COL/ESP in light of the preconstruction impacts, as explained in COL/ESP-ISG-4. The ISG and the supplement are available at http://www.nrc.gov/reading-rm/doc-collections/isg/col-app-design-cert.html on the NRC's public website.				
35	Non-radiological Human Health		1	Cumulative Impacts (ESRP 4.7 proposed)	Has the applicant identified activities of other agencies that have occurred or will occur in the region that may contribute to a cumulative impact on non-radiological human health aspects of the waste systems?				
36	Non-radiological Human Health		1	Cumulative Impacts (ESRP 4.7 proposed)	Has the applicant identified projects in the region that may contribute to a cumulative impact on non-radiological human health aspects of the waste systems?				

**Table 1. Environmental Report Acceptance Review
Appendix K – Site and Technical Overview**

The purpose of this table is to provide the NRC with a deliverable for the Environmental Report Acceptance Review that will assist them in implementing Office Instruction NRO-REG-100. The PNNL version of Table 1 varies somewhat from Table 1 of Attachment D found in the office instruction. This table may be used either in addition to the Sufficiency Review Checklist or in lieu of the checklist. For all the items where there is a “1” listed in the priority column, the accident reviewer is the primary reviewer. In addition to the primary review responsibilities, the accident reviewer should also be looking at the ESRP sections shown in the “Review Interface” portion of each primary ESRP (listed as a “2” in the priority column). If the application is an early site permit that uses the plant parameter envelope (PPE) approach to define a “surrogate reactor” then reference [RS-002](#), [NEI 10-01](#) and previous ESP EISs such as [North Anna ESP](#), or PSEG ESP. Reference [10 CFR 50.33](#) for general application information and [10 CFR 52.17](#), [10 CFR 52.79](#) for technical contents of an ESP and a combined license respectively. The safety side will verify the safety aspects of the regulatory information. If the information is not in the environmental report then check the safety side of the application. [10 CFR 51.45](#) has the general information required for the environmental report and [10 CFR 51.50](#) has the specific information required for an ESP or a COL.

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
1	Site and Technical Overview	Team Lead/Deputy	1	ESRP 1.1	Full names of all organizations (e.g., utilities and municipalities) sharing ownership of the proposed project.				
2	Site and Technical Overview		1	ESRP 1.1	Name of the organization designated as the applicant. This organization is the contact with the NRC during the licensing process and will be responsible for construction and operation of the proposed project.				
3	Site and Technical Overview		2	ESRP 1.1	Site location with respect to nearby towns and natural features.				
4	Site and Technical Overview		1	ESRP 1.1, 3.2	Number and type of proposed reactors, highest anticipated gross MW(t) output, and net electrical output.				
5	Site and Technical Overview		2	ESRP 1.1	Cooling system description (e.g., intake type, heat dissipation type, discharge type, and/or source of cooling water).				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
6	Site and Technical Overview		2	ESRP 1.1	Transmission system description (e.g., length of new corridors, new towers, or conductors on existing corridors).				
7	Site and Technical Overview		1	ESRP 1.1	The nature of the proposed action and the constraints placed on the review because of the type of action.				
8	Site and Technical Overview		1	ESRP 1.1	Proposed dates for start and completion of major activities.				
9	Site and Technical Overview		1	ESRP 1.2	The name of each related authorization, including the responsible agency and the applicable law, ordinance, or regulation.				
10	Site and Technical Overview		1	ESRP 1.2	The date of application/initiation and scheduled date of issuance of each authorization.				
11	Site and Technical Overview		1	ESRP 1.2	The current status of each authorization.				
12	Site and Technical Overview		1	ESRP 1.2	The principal environmental factors to be covered by the authorization.				
13	Site and Technical Overview		2	ESRP 2.1	Site location: State and county.				
14	Site and Technical Overview		2	ESRP 2.1	Area of the proposed site.				
15	Site and Technical Overview		2	ESRP 2.1	Distance and direction from the nearest major city.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
16	Site and Technical Overview		2	ESRP 2.1	Distance and direction from several nearby towns and readily recognized landmarks, including major nearby highways, rivers, or other bodies of water within 6 mi of the proposed facility.				
17	Site and Technical Overview		2	ESRP 2.1	For geographical orientation, simplified maps (based on an official source of information centered on the facility site: one general map with an approximate 50-mi radius and a second map with an approximate 6-mi radius of the facility (orient true north at the top of the map).				
18	Site and Technical Overview		1	ESRP 2.1	High-oblique aerial view or perspective drawing of the site with an indication of the facility boundary (facility site should occupy about 10% of the view).				
19	Site and Technical Overview		2	ESRP 2.8	A description of Federal actions associated with acquisition and/or use of the proposed site and transmission corridors or of any other offsite property needed for the proposed project				
20	Site and Technical Overview		2	ESRP 2.8	Description of planned Federal projects that will be required either to provide an adequate source of plant cooling water or to ensure an adequate supply of cooling water over the operating lifetime of the plant				
21	Site and Technical Overview		2	ESRP 2.8	Descriptions of any other planned Federal projects or activities that must be completed as a condition of plant construction or operation				
22	Site and Technical Overview		2	ESRP 2.8	Descriptions of planned Federal projects that are contingent on plant construction and operation				
23	Site and Technical Overview		2	ESRP 2.8	The ER or SSAR/FSAR should provide some indication of other nearby industrial facilities, other nuclear facilities in the region, or other Federal projects existing in the region or that might be required to construct and operate the proposed facility.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
24	Site and Technical Overview		1	ESRP 3.0, 3.1	Topographic maps of the proposed site and vicinity (refer to ESRP 2.2) showing facility and station layout, the exclusion area, site boundary, access roads, railroads, liquid and gaseous release points (and their elevations), meteorological towers, the construction zone, land to be cleared, waste disposal areas, and other buildings and structures (both temporary and permanent) associated with the project, including related offsite structures.				
25	Site and Technical Overview		1	ESRP 3.0, 3.1	A description of the proposed project and any related offsite structures, including proposed plans to seclude and screen the facilities and to integrate the buildings and landscaping architecturally into the environs.				
26	Site and Technical Overview		1	ESRP 3.1	Aesthetic principles and concepts used in the facility design and layout.				
27	Site and Technical Overview		1	ESRP 3.1	Representative ground-level photographs of the site on which major station features are superimposed. These should be taken from among the following typical vantage points when a visual impact from that location can be expected: 1. residential 2. commercial 3. industrial 4. educational 5. transportation corridors (air, auto, rail, pedestrian) 6. cultural (recreational, historic, archaeological).				
28	Site and Technical Overview		1	ESRP 3.1	Low, oblique aerial photograph of the site and vicinity on which major station features are superimposed.				
29	Site and Technical Overview		1	ESRP 3.1	An architectural rendering of the proposed project to include landscaping and all major station features.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a "No" for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a "Yes" for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
30	Site and Technical Overview		2?	ESRP 3.2	Reactor fuel assembly description, total quantities of uranium, and percentage 235U enrichment				
31	Site and Technical Overview		2?	ESRP 3.2	The planned average irradiation level of spent fuel, in megawatt days/ton				
32	Site and Technical Overview		2	ESRP 4.6	Data and information related to the applicant's commitments to measures and controls to limit potential impacts during construction should consist of the following four elements: (1) identification of the impact, (2) the planned control program (including monitoring), (3) the basis and need for an environmental protection plan (EPP), and (4) the control procedures for the following areas: a. noise b. erosion c. dust d. traffic e. effluents and wastes f. surface-water impacts g. groundwater impacts h. land-use protection/restoration i. water-use protection/restoration j. terrestrial ecosystem impacts k. aquatic ecosystem impacts l. socioeconomic impacts m. radiation exposure to construction workers n. other site-specific impacts.				
33	Site and Technical Overview		2	ESRP 4.6	Proposed design or planned control program in each of the above areas.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
34	Site and Technical Overview		2	ESRP 5.10	Data and information related to the applicant’s commitments to measures and controls to limit potential impacts during operation should consist of the following four elements: (1) identification of the impact, (2) the planned control program (including monitoring), (3) the basis and need for an EPP, and (4) the control procedures for the following areas: a. noise b. erosion c. effluents and wastes d. surface-water impacts e. groundwater impacts f. terrestrial ecosystem impacts g. aquatic ecosystem impacts h. socioeconomic impacts i. cooling tower drift impacts j. other site-specific impacts.				
35	Site and Technical Overview		2	ESRP 5.10	Proposed design or planned control program in each of the above areas.				
36	Site and Technical Overview		1	ESRP 6.7	Site preparation and construction monitoring commitments.				
37	Site and Technical Overview		1	ESRP 6.7	Preoperational monitoring commitments.				
38	Site and Technical Overview		1	ESRP 6.7	Operational monitoring commitments.				
39	Site and Technical Overview		1	ESRP 10.1	Did the applicant identify unavoidable adverse construction and operational impacts and mitigation actions related to the action. This is a summary of unavoidable adverse impacts identified by the reviewers of ESRP Chapters 4 and 5.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
40	Site and Technical Overview		1	ESRP 10.2	Did the applicant identify irreversible and irretrievable commitments of materials that will be used during project construction and operation. This is a summary of the descriptions of the irretrievable commitments of environmental resources identified by the reviewers for ESRP Chapters 4 and 5.				
41	Site and Technical Overview		1	ESRP 10.3	Did the applicant describe the short- and long-term use of the human environment related to the action (need to obtain data from ESRPs 10.1 and 10.2)?				
52	Site and Technical Overview		1	10 CFR 51.45(c)	Does the ER contain a description the environmental impacts of pre-construction activities at the site, as explained in COL/ESP-ISG-4? The ISG and the supplement are available at http://www.nrc.gov/reading-rm/doc-collections/isg/col-app-design-cert.html on the NRC’s public website.				
43	Site and Technical Overview		1	10 CFR 51.50(c)	Does the ER satisfy 10 CFR 51.50(c) by identifying procedures for reporting and keeping records of environmental data, and any conditions and monitoring requirements for protecting the non-aquatic environment, proposed for possible inclusion in the COL as environmental conditions in accordance with 10 CFR 50.36b? This information may be found in an EPP. [NOTE - The EPP is sometimes in the ITAAC folder and is not part of the ER]				

**Table 1. Environmental Report Acceptance Review
Appendix L – Socioeconomics and Environmental Justice**

The purpose of this table is to provide the NRC with a deliverable for the Environmental Report Acceptance Review that will assist them in implementing Office Instruction NRO-REG-100. The PNNL version of Table 1 varies somewhat from Table 1 of Attachment D found in the office instruction. This table may be used either in addition to the Sufficiency Review Checklist or in lieu of the checklist. For all the items where there is a “1” listed in the priority column, the accident reviewer is the primary reviewer. In addition to the primary review responsibilities, the accident reviewer should also be looking at the ESRP sections shown in the “Review Interface” portion of each primary ESRP (listed as a “2” in the priority column).

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
44	Socioeconomics and Environmental Justice		2	ESRP 2.5.1	Demographic characteristics of the 50-mile enclosed population. This should include specific reporting of population characteristics and projections for the counties or other geographically defined area that constitutes the economic region where the applicant expects most of the impacts to accrue. Demographic characteristics should include transient or migrant population, racial and ethnic background, and income distribution from the most recent single source that can be disaggregated to the Census block group (CBG) level for all demographic subcategories.				
45	Socioeconomics and Environmental Justice		1	ESRP 2.5.2	Information related to the area’s current and historic economic base, including: 1. important regional industry by category, including employment 2. size and description of the heavy construction industry and construction labor force within the region 3. total regional labor force 4. regional unemployment levels and future economic outlook 5. characterization of onsite labor, including any operations and outage workers for any existing electricity generating units on the proposed site.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
46	Socioeconomics and Environmental Justice		1	ESRP 2.5.2	Information related to the economic region’s political structure, including 1. political jurisdictions and tax districts identifying those tax districts (and their revenues) that will be directly affected by facility construction or operation 2. any current or proposed agreements for special tax rates or fees for the proposed project 3. local and regional planning and administrative organizations.				
47	Socioeconomics and Environmental Justice		1	ESRP 2.5.2	Housing information, including the sales and rental market in the economic region, number and types of units, turnover and vacancy rates, and trends in addition to housing stock, adequacy of structures, and location of existing and projected housing. [Housing units include single family and multiple family dwellings, apartments, trailer parks, sub-let rooms, and RV parks.]				
48	Socioeconomics and Environmental Justice		1	ESRP 2.5.2	Information about the local educational system (regional primary and secondary schools—public and private—and higher education institutions), including capacity and present percentage of use. The discussion should include current student-to-teacher ratios and any state or locally mandated maximum ratio. Planned additions to the school district’s inventory of campuses should also be discussed.				
49	Socioeconomics and Environmental Justice		1	ESRP 2.5.2	Public and private recreational facilities and opportunities, including present and projected capacity and percentage of use. (Much of the detail for this discussion may be found in the Land Use analysis in section 2.2.)				
50	Socioeconomics and Environmental Justice		1	ESRP 2.5.2	Local plans concerning land use and zoning that are relevant to population growth, housing, and changes in land-use patterns.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
51	Socioeconomics and Environmental Justice		1	ESRP 2.5.2	<p>Social services and public facilities, including:</p> <ol style="list-style-type: none"> 1. present and projected water and sewer/sewage disposal facilities, including present capacity and available capacity, as well as any planned changes to the facilities. (Much of the detail for this discussion may be found in the hydrology analysis in section 2.3.) 2. present and projected police and fire department manpower and force-to-population ratios, and emergency planning responsibilities 3. location of hospitals, number of medical doctors, and specialized health facilities, including present and projected capacity, available capacity and any planned additions or expansions 				
52	Socioeconomics and Environmental Justice		1	ESRP 2.5.2	<p>Information on highways and transportation systems, for example:</p> <ol style="list-style-type: none"> 1. regional and local highway systems, including carrying capacity and condition of roads and highways 2. relevant traffic studies, including Level of Service (LOS) assignments for all critical intersections for commuter and delivery traffic to the proposed project 3. availability and type of public transportation, including any special transportation services available for low-income, elderly, or disabled people 4. improvements that could mitigate traffic flow impacts to and from the station site. 5. Availability and characteristics of any heavy haul roads to the proposed site 6. Availability and characteristics of any rail or waterway infrastructure that could be used for the proposed project 				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
53	Socioeconomics and Environmental Justice		1	ESRP 2.5.4	General description (with maps) of the location of all minority and low-income populations within the 50 mile demographic region of the proposed project. This analysis should be performed at the Census block group level for each minority, ethnic, and low-income group, employing the two-part identification process discussed in ISG 026 Attachment 2.				
54	Socioeconomics and Environmental Justice		1	ESRP 2.5.4	More specific description of any unique minority or low-income communities within the economic region that was not identified by the Census block group that was discovered by on-site observation or through interviews with local officials (including records of such efforts).				
55	Socioeconomics and Environmental Justice		1	ESRP 2.5.4	Description of resources, customs and practices, circumstances, or preconditions of particular minority or low-income populations that could provide a pathway for disproportionately high and adverse health or environmental impacts from the proposed project.				
56	Socioeconomics and Environmental Justice		1	ESRP 4.4.1	Brief overview with a reference to the non-radiological health section for noise, light, dust, and gaseous pollutants from preconstruction and construction activities at the proposed and a discussion of the economic aspect of any health implications.				
57	Socioeconomics and Environmental Justice		1	ESRP 4.4.1	Discussion of the potential physical impacts to buildings and other offsite structures from preconstruction and construction activities at the proposed site and any economic implications from them. This discussion should include any state or local ordinances and potential mitigation activities, if available.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
58	Socioeconomics and Environmental Justice		1	ESRP 4.4.1	Brief overview (with a reference to the land use discussion) of any physical impacts to local recreation venues due to the visitation of in-migrating workers and their families and the economic consequences of those impacts. This discussion should consider overcrowding, crowding out, and additional wear and tear (not to the quality of the viewscape beyond the borders of the recreation area itself).				
59	Socioeconomics and Environmental Justice		1	ESRP 4.4.1	Discussion of the potential physical impacts to roads, heavy haul roads, rail road spurs and waterway structures from preconstruction and construction activities at the proposed site. This discussion should include any state or local ordinances and potential mitigation activities, if available.				
60	Socioeconomics and Environmental Justice		1	ESRP 4.4.2	Description of the proposed preconstruction and construction workforce, disaggregated by month for the entire preconstruction and construction period, including any operations or outage workers expected to be on site during construction. Characterization of the workforce should include worker schedules (hours per day and week, number of shifts per day and the number of workers for each shift, and the assumptions behind how many workers would be local and how many would need to in-migrate to the proposed site.				
61	Socioeconomics and Environmental Justice		1	ESRP 4.4.2	Description of the methodology and results of the applicant’s number and distribution of in-migrating workers into the 50 mile demographic region and the economic region. This discussion should be accompanied by a detailed table that displays the calculations involved in this distribution.				
62	Socioeconomics and Environmental Justice		1	ESRP 4.4.2	Discussion of the underlying assumptions about the characteristics of the in-migrating workforce, including alone or with their family, number and expected ages of children group (i.e., generally by non-school, elementary, middle, and high school ages).				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
63	Socioeconomics and Environmental Justice		1	ESRP 4.4.3	Discussion of the economic impacts of in-migrating workers on the economic region, including the results of an input-output model assessment of the effects of preconstruction and construction activities on local employment and income. The use of model multipliers should be supported with documentation from the source of the input-output model for confirmatory purposes.				
64	Socioeconomics and Environmental Justice		1	ESRP 4.4.3	Annual expenditures by the applicant for building materials, supplies, and goods and services within and economic region during construction. For sites with an existing generating presence, historic expenditures for operations activities should be included, as well as an assumption as to the magnitude of expected expenditures for the proposed project’s preconstruction and construction activities.				
65	Socioeconomics and Environmental Justice		1	ESRP 4.4.3	Discussion of the tax consequences of preconstruction and construction activities of the proposed project, including Federal, state, and local income taxes, state and local sales and use taxes, and property taxes for all applicable jurisdictions. If the proposed project is subject to property taxes while under construction, those taxes should be identified and quantified.				
66	Socioeconomics and Environmental Justice		1	ESRP 4.4.4	An overview (with reference to the non-radiological health discussion that provides greater detail) of the expected commuting patterns of the local and in-migrating workers, separately and in conjunction with all baseline traffic (including other commuters to the proposed site if it is an operating generating station). The discussion should estimate the changes in LOS at principally affected intersections with and without any mitigation strategies identified by the applicant in the ER, including the economic aspect of any health impacts from accidents and air quality changes due to traffic.				

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67	Socioeconomics and Environmental Justice		1	ESRP 4.4.4	Discussion of the economic consequences of the expected changes to the viewshed and recreational experience at local recreation venues due to the presence of the proposed project (e.g., cooling towers and plumes intruding on and blocking the view of recreation participants).				
68	Socioeconomics and Environmental Justice		1	ESRP 4.4.4	Discussion of the assumptions behind the distribution of in-migrating workers among the different types of dwellings available in the economic region, along with an assessment of whether or not there is sufficient housing and whether or not the in-migrating workforce would create upward pressure on the price of housing for the general public.				
69	Socioeconomics and Environmental Justice		1	ESRP 4.4.4	A discussion of the expected contribution to water and sewer use for each community in the economic region from the in-migration of workers and their families, and the resulting impact to each service in the region.				
70	Socioeconomics and Environmental Justice		1	ESRP 4.4.4	A discussion of the expected impact of the in-migrating workforce on police, fire, and medical services, including a discussion of how many new police and fire personnel would need to be hired to maintain the baseline force-to-population ratios.				
71	Socioeconomics and Environmental Justice		1	ESRP 4.4.4	A discussion of the expected impact of the in-migrating workers and their families on schools within the economic region, including the expected change to student-to-teacher ratios, disaggregated by grade.				
72	Socioeconomics and Environmental Justice		1	ESRP 4.5	Identification of any potential pathways by which a health or environmental impact during preconstruction and construction could result in a disproportionately high and adverse impact on a minority or low-income population.				

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73	Socioeconomics and Environmental Justice		1	ESRP 4.5	Any assessment (qualitative or quantitative, as appropriate) of the degree to which each minority or low-income population would disproportionately experience adverse human health or environmental impacts during preconstruction and construction compared to the entire geographic area.				
74	Socioeconomics and Environmental Justice		1	ESRP 4.5	Any mitigative measures for which credit is being taken to reduce environmental justice concerns.				
75	Socioeconomics and Environmental Justice		1	ESRP 5.4.1	Discussion of the economic consequences of any potential physical impacts to buildings and other offsite structures from operations activities at the proposed site. This discussion should include any state or local ordinances and potential mitigation activities, if available.				
76	Socioeconomics and Environmental Justice		1	ESRP 5.4.1	Brief overview of any potential physical impacts to local recreation venues due to the visitation of in-migrating workers and their families (with reference to the Land Use section where the detailed discussion can be found), including a discussion of the economic consequences of those impacts. This discussion should consider overcrowding, crowding out, and additional wear and tear (not to the quality of the viewscape beyond the borders of the recreation area itself).				
77	Socioeconomics and Environmental Justice		1	ESRP 5.4.1	Discussion of the potential physical impacts to roads, heavy haul roads, rail road spurs and waterway structures from operations activities at the proposed site. This discussion should include any state or local ordinances and potential mitigation activities, if available.				
78	Socioeconomics and Environmental Justice		1	ESRP 5.4.2	Description of the proposed operations workforce, include worker schedules (hours per day and week, number of shifts per day and the number of workers for each shift)..				

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79	Socioeconomics and Environmental Justice		1	ESRP 5.4.2	Description of the methodology and results of the applicant’s number and distribution of in-migrating operations workers into the 50 mile demographic region and the economic region. This discussion should be accompanied by a detailed table that displays the calculations involved in this distribution.				
80	Socioeconomics and Environmental Justice		1	ESRP 5.4.2	Discussion of the underlying assumptions about the characteristics of the in-migrating operations workforce, including alone or with their family, number and expected ages of children group (i.e., generally by non-school, elementary, middle, and high school ages).				
81	Socioeconomics and Environmental Justice		1	ESRP 5.4.3	Discussion of the economic impacts of in-migrating operations workers on the economic region, including the results of an input-output model assessment of the effects of operations activities on local employment and income. The use of model multipliers should be supported with documentation from the source of the input-output model for confirmatory purposes.				
82	Socioeconomics and Environmental Justice		1	ESRP 5.4.3	Annual expenditures by the applicant for building materials, supplies, and goods and services within the economic region during operations.				
83	Socioeconomics and Environmental Justice		1	ESRP 5.4.3	Discussion of the tax consequences of operations activities of the proposed project, including Federal, state, and local income taxes, state and local sales and use taxes, and property taxes for all applicable jurisdictions..				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
84	Socioeconomics and Environmental Justice		1	ESRP 5.4.4	An overview (with reference to the non-radiological health discussion that provides greater detail) of the expected commuting patterns of the local and in-migrating operations workers, separately and in conjunction with all baseline traffic (including other commuters to the proposed site if it is an operating generating station). The discussion should estimate the changes in LOS at principally affected intersections with and without any mitigation strategies identified by the applicant in the ER, including the economic aspect of any health impacts from accidents and air quality changes due to traffic.				
85	Socioeconomics and Environmental Justice		1	ESRP 5.4.4	Brief overview (with reference to the Land Use section where greater detail can be found) of the expected changes to the viewshed and recreational experience at local recreation venues due to the presence of the proposed project (e.g., cooling towers and plumes intruding on and blocking the view of recreation participants). The discussion should include an assessment of the economic impacts of the changes to visitors and residents.				
86	Socioeconomics and Environmental Justice		1	ESRP 5.4.4	Discussion of the assumptions behind the distribution of operations workers among the different types of dwellings available in the economic region, along with an assessment of whether or not there is sufficient housing and whether or not the in-migrating workforce would create upward pressure on the price of housing for the general public.				
87	Socioeconomics and Environmental Justice		1	ESRP 5.4.4	A discussion of the expected contribution to water and sewer use for each community in the economic region from the in-migration of operations workers and their families, and the resulting impact to each service in the region.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
88	Socioeconomics and Environmental Justice		1	ESRP 5.4.4	A discussion of the expected impact of the in-migrating operations workforce and the commuting workforce on police, fire, and medical services, including a discussion of how many new police and fire personnel would need to be hired to maintain the baseline force-to-population ratios.				
89	Socioeconomics and Environmental Justice		1	ESRP 5.4.4	A discussion of the expected impact of the in-migrating operations workers and their families on schools within the economic region, including the expected change to student-to-teacher ratios, disaggregated by grade.				
90	Socioeconomics and Environmental Justice		1	ESRP 5.5	Identification of any potential pathways by which a health or environmental impact during operations could result in a disproportionately high and adverse impact on a minority or low-income population.				
91	Socioeconomics and Environmental Justice		1	ESRP 5.5	Any assessment (qualitative or quantitative, as appropriate) of the degree to which each minority or low-income population would disproportionately experience adverse human health or environmental impacts during operations compared to the entire geographic area.				
92	Socioeconomics and Environmental Justice		1	ESRP 5.5	Any mitigative measures for which credit is being taken to reduce environmental justice concerns.				
93	Socioeconomics and Environmental Justice		1	10 CFR 51.45(c)	A description the environmental impacts of preconstruction activities related to socioeconomics at the site and an analysis of the cumulative impacts of the activities to be authorized by the COL in light of the preconstruction impacts, as explained in COL/ESP-ISG-4. The ISG and the supplement are available at http://www.nrc.gov/reading-rm/doc-collections/isg/col-app-design-cert.html on the NRC’s public website.				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
94	Socioeconomics and Environmental Justice		1	Alternative Site (ESRP 9.3)	Has the applicant provided reconnaissance data to characterize the socioeconomic and environmental justice impacts at the alternative sites? For each category discussed in sections 4.4, 4.5, 5.4, and 5.5, there should be a corresponding discussion in each alternative site socioeconomic and environmental justice section.				

**Table 1. Environmental Report Acceptance Review
Appendix M – Greenhouse Gas and Climate Change**

The purpose of this table is to provide the NRC with a deliverable for the Environmental Report Acceptance Review that will assist them in implementing Office Instruction NRO-REG-100. The PNNL version of Table 1 varies somewhat from Table 1 of Attachment D found in the office instruction. This table may be used either in addition to the Sufficiency Review Checklist or in lieu of the checklist. For all the items where there is a “1” listed in the priority column, the accident reviewer is the primary reviewer. In addition to the primary review responsibilities, the accident reviewer should also be looking at the ESRP sections shown in the “Review Interface” portion of each primary ESRP (listed as a “2” in the priority column). 79 FR 77802 provides the Council on Environmental Quality draft guidance for considering greenhouse gases (GHGs) and climate change and 10 CFR 51.10(a) covers NRC’s policy to voluntarily take account of CEQ regulations. Guidance on GHG and climate change analysis is provided in [ISG -26 attachment 1](#). Note, if the application is missing some or all of this information discuss with the TL whether the reviewer can independently estimate the GHGs as was done for the previous EISs; the application does not have to be rejected solely because this information was missing from the ER.

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
1	Meteorology	Met	1	ISG-26 Attachment 1	1. Is the following material found and cited in the Application? For EIS chap 2: Does the application provide information on regional climate change for the proposed site location from the latest U.S. Global Change Research Program (USGCRP) Report? This will form the baseline for the climate change discussion. Does the application consider the effects of a changing climate on air and water resources, ecological resources, environmental justice issues, and human health issues? Climate change in the affected environment section should cover the project period and resources that are likely to be impacted by climate change during this period.				
2	Meteorology	Met	1	ISG-26 Attachment 1	Did the application include a GHG footprint based on ISG-26 attachment 1 appendix A or a site specific analysis? Either is acceptable.				
3	Meteorology	Met	1	ISG-26 Attachment 1	For EIS chap 4 and 5: Does the application contain estimated air emissions (including GHGs) and mitigation measures or plans to control air emissions from preconstruction/construction and operations, including traffic?				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
4	Meteorology	Met	1	ISG-26 Attachment 1	For EIS chapter 6: Does the application contain GHG emissions from the uranium fuel cycle (including impacts from fossil fuel combustion and decommissioning activities)? If a light-water-cooled reactor is proposed, are the GHG emissions from the uranium fuel cycle traceable to information given in Table S-3 of 10 CFR 51.51?				
5	Meteorology	Met	1	ISG-26 Attachment 1	For EIS chapter 7: Does the application contain GHG emissions from all phases of the proposed action? Does it provide input on reasonably foreseeable changes in the climate and the associated effects on specific resource areas during the period of the proposed action for the proposed site location cumulative impacts analysis? Does each subject area contain a discussion of climate change impacts on the specific resource being considered?				
6	Meteorology	Met	1	ISG-26 Attachment 1	For EIS Chap 9: Does the application contain GHG emissions from alternative energy sources? GHG analysis for alternative sites is addressed in the same manner as the proposed site, while effects of a changing climate should be considered at each alternative site. Did the application address GHG emissions and climate change effects for alternative sites?				

**Table 1. Environmental Report Acceptance Review
Appendix N – Transportation**

The purpose of this table is to provide the NRC with a deliverable for the Environmental Report Acceptance Review that will assist them in implementing Office Instruction NRO-REG-100. The PNNL version of Table 1 varies somewhat from Table 1 of Attachment D found in the office instruction. This table may be used either in addition to the Sufficiency Review Checklist or in lieu of the checklist. For all the items where there is a “1” listed in the priority column, the accident reviewer is the primary reviewer. In addition to the primary review responsibilities, the accident reviewer should also be looking at the ESRP sections shown in the “Review Interface” portion of each primary ESRP (listed as a “2” in the priority column).

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
1	Transportation	Insert Team member name	1	ESRP 3.8	Does the applicant compare the proposed reactor’s core thermal power level to the condition specified in 10 CFR 51.52(a)(1) (i.e., 3800 MW(t))?				
2	Transportation		1	ESRP 3.8	Does the applicant compare the fuel form and enrichment levels to the conditions specified in 10 CFR 51.52(a)(2) (i.e., the reactor fuel is in the form of sintered uranium dioxide pellets having a uranium-235 enrichment not exceeding 4% by weight and the pellets are encapsulated in zircalloy rods)?				
3	Transportation		1	ESRP 3.8	Does the applicant compare the average irradiation level of the fuel to the conditions specified in 10 CFR 51.52(a)(3) (i.e., average level of irradiation of the irradiated fuel from the reactor does not exceed 33,000 MW/MT and no irradiated fuel assembly is shipped until at least 90 days after it is discharged from the reactor)?				
4	Transportation		1	ESRP 3.8	Does the applicant state that all radioactive waste (with the exception of irradiated fuel) shipped from the reactor is packaged and in solid form (10 CFR 51.52(a)(4))?				
5	Transportation		1	ESRP 3.8	Does the applicant state that the unirradiated fuel is shipped to the reactor by truck; irradiated fuel is shipped from the reactor by truck, rail, or barge; and radioactive waste other than irradiated fuel is shipped from the reactor by truck or rail (10 CFR 51.52(a)(5))?				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a "No" for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a "Yes" for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
6	Transportation		1	ESRP 3.8	If the proposed reactor and fuel designs and operations do not meet all the conditions in 10 CFR 51.52(a)(1) through (a)(5), does the applicant provide an analysis of the environmental impacts of transportation of fuel and waste to and from the reactor with respect to normal conditions of transport and possible accidents (10 CFR 51.52(a)(6))?				
7	Transportation		1	ESRP 3.8	Does the applicant estimate the heat load in a spent fuel shipping cask and compare the result to 10 CFR 51.52 Table S-4 conditions (i.e., 250,000 Btu/hr [~73 kW])?				
8	Transportation		1	ESRP 3.8	Does the applicant evaluate the weights of shipments of fuel and waste and compare that to the shipment weights in 10 CFR 51.52, Table S-4 (i.e., governed by Federal or State restrictions; 73,000 lbs/truck, 100 tons/cask/rail car)?				
9	Transportation		1	ESRP 3.8	Does the applicant estimate traffic density for fuel and waste shipments and compare the result to the Table S-4 condition (i.e., one truck shipment/day or three rail shipments/month)?				
10	Transportation		1	ESRP 3.8	Does the applicant estimate the radiation dose to transport workers and compare the result to the Table S-4 condition for the proposed site and each alternative site (i.e., individual radiation doses in the range from 0.01 to 300 millirem (mrem)/reactor yr, population doses are 4 person-mrem/reactor yr)?				
11	Transportation		1	ESRP 3.8	Does the applicant calculate routine radiation doses to the general public-onlookers and compare the results to the Table S-4 conditions for the proposed site and each alternative site (i.e., routine radiation doses to onlookers; individual radiation doses in the range 0.003 to 1.3 mrem/reactor yr and population doses 3 person-mrem/reactor yr)?				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a "No" for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a "Yes" for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
12	Transportation		1	ESRP 3.8	Does the applicant calculate routine radiation doses to the general public along the route and compare the results to Table S-4 conditions for the proposed site and each alternative site (i.e., individual radiation doses in the range 0.0001 to 0.06 mrem/reactor year and population doses 3 person-mrem/reactor year (includes doses to onlookers)?				
13	Transportation		1	ESRP 3.8	Does the applicant demonstrate that the radiological effects of accidents are SMALL as stated in Table S-4?				
14	Transportation		1	ESRP 3.8	Does the applicant estimate the non-radiological impacts of accidents and compare the results to Table S-4 conditions (i.e., non-radiological accidents result in one fatal injury per 100 reactor years, 1 non-fatal injury in 10 reactor years, and \$475 in property damage per year)?				
15	Transportation		1	ESRP 7.4	Does the ER contain a statement about the comparison of the applicant's spent fuel characteristics with respect to the 10 CFR 51.52(a) conditions?				
16	Transportation		1	ESRP 7.4	Does the ER specify the estimated distance from the proposed reactor site to the spent fuel disposal facility?				
17	Transportation		1	ESRP 7.4	If the spent fuel is not in compliance with 10 CFR 51.52(a), does the ER contain an analysis of the environmental effects of transportation accidents that could occur for the proposed site and each alternative site?				
18	Transportation		2	ESRP 3.8	There are no technical deficiencies in the Review Interfaces identified in ESRP 3.8.				
19	Transportation		2	ESRP 7.4	There are no technical deficiencies in the Review Interfaces identified in ESRP 7.4.				
20	Transportation		2	ESRP 3.8 and 7.4	For an ESP review, has the applicant established a conservative plant parameter envelope (PPE) for the purposes of transportation and comparison to Table S-4?				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, CFR, or RG Section)	Sufficiency Review Question 1. Is the following material found and cited in the Application?	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section where information was found and any other pertinent information.
21	Transportation		1	10 CFR 51.45(c)	A description the environmental impacts of preconstruction activities related to transportation at the site and an analysis of the cumulative impacts of the activities to be authorized by the COL in light of the preconstruction impacts, as explained in COL/ESP-ISG-4. The ISG and the supplement are available at http://www.nrc.gov/reading-rm/doc-collections/isg/col-app-design-cert.html on the NRC’s public website.				
22	Transportation		1	Cumulative Impacts (ESRP 4.7 proposed)	Has the applicant identified activities of other agencies that have occurred or will occur in the region that may contribute to a cumulative impact on transportation?				
23	Transportation		1	Cumulative Impacts (ESRP 4.7 proposed)	Has the applicant identified projects in the region that may contribute to a cumulative impact on transportation?				

**Table 1. Environmental Report Acceptance Review
Appendix O – Uranium Fuel Cycle**

The purpose of this table is to provide the NRC with a deliverable for the Environmental Report Acceptance Review that will assist them in implementing Office Instruction NRO-REG-100. The PNNL version of Table 1 varies somewhat from Table 1 of Attachment D found in the office instruction. This table may be used either in addition to the Sufficiency Review Checklist or in lieu of the checklist. For all the items where there is a “1” listed in the priority column, the accident reviewer is the primary reviewer. In addition to the primary review responsibilities, the accident reviewer should also be looking at the ESRP sections shown in the “Review Interface” portion of each primary ESRP (listed as a “2” in the priority column).

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Sufficiency Review Question	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes:
1	Uranium Fuel Cycle	Insert Team member name	1	5.7	Comparison of estimated impacts from the proposed facility to the relevant requirements of the most recent version of Table S-3 of 10 CFR 51.51(a).				
2	Uranium Fuel Cycle		1	5.7	As applicable, a discussion of features of the proposed facility that could result in environmental impacts that differ substantially from those estimated by the NRC for model light-water reactors. Evaluation of the impacts from the proposed facility demonstrating that the features are bounded by the impacts listed in the ESRP.				
3	Uranium Fuel Cycle		2	5.7	There are no technical deficiencies in support of uranium fuel cycle for the sections mentioned in Review Interfaces in ESRP 5.7.				
4	Uranium Fuel Cycle		1	Cumulative Impacts (ESRP 4.7 proposed)	Has the applicant identified activities of other agencies that have occurred or will occur in the region that may contribute to a cumulative impact on uranium fuel cycle?				
5	Uranium Fuel Cycle		1	Cumulative Impacts (ESRP 4.7 proposed)	Has the applicant identified projects in the region that may contribute to a cumulative impact on uranium fuel cycle?				

**Table 1. Environmental Report Acceptance Review
Appendix P– Cumulative**

The purpose of this table is to provide the NRC with a deliverable for the Environmental Report Acceptance Review that will assist them in implementing Office Instruction NRO-REG-100. The PNNL version of Table 1 varies somewhat from Table 1 of Attachment D found in the office instruction. This table may be used either in addition to the Sufficiency Review Checklist or in lieu of the checklist. For all the items where there is a “1” listed in the priority column, the accident reviewer is the primary reviewer. In addition to the primary review responsibilities, the accident reviewer should also be looking at the ESRP sections shown in the “Review Interface” portion of each primary ESRP (listed as a “2” in the priority column). 10 CFR 51.45 specifies the requirement to discuss cumulative impacts in an environmental report. Guidance on cumulative impact analysis is provided in [ISG -26 attachment 4](#).

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes:
1	Cumulative	All resource specialists	3	10 CFR 51.45 (c)	A description the environmental impacts of preconstruction activities related to resources at the site and an analysis of the cumulative impacts of the activities to be authorized by the combined license (COL) in light of the preconstruction impacts, as explained in COL/early site permit (ESP)-Interim Staff Guidance (ISG)-4. The ISG and the supplement are available at http://www.nrc.gov/reading-rm/doc-collections/isg/col-app-design-cert.html on the NRC’s public website				
2	All	All resource specialists	3	ISG-26 Attachment 4	Cumulative analysis relies on sufficient information being provided to complete chapters 2, 4, 5 and 6 of the EIS. If there is insufficient information in one of those chapters it is likely to affect the cumulative analysis. Is there sufficient information to complete chapters 2, 4, 5 and 6?				
3	All	All resource specialists	3	ISG-26 Attachment 4	Is the geographic area to be considered in evaluating cumulative impacts for each resource and ecological component identified with a brief explanation of how and why the area of interest was selected?				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
4	All	All resource specialists	1	ISG-26 Attachment 4	1. Is the following material found and cited in the Application? Does the application include a discussion of the time frames for past, present and reasonably foreseeable actions?				
5	All	All resource specialists	1	ISG-26 Attachment 4	Does the application include a table or discussion of past present and reasonably foreseeable actions that could have meaningful cumulative impacts with the proposed action? Are the past actions discussed in a similar manner to the example provide in ISG-26 Attachment 4?				
6	All	All resource specialists	3	ISG-26 Attachment 4	For each resource area, does the application, determine the cumulative effect of the proposed action, when overlaid or added to temporary or permanent effects associated with past, present, or reasonably foreseeable future projects?				
7	All	All resource specialists	3	ISG-26 Attachment 4	Does the application identify any plans by the applicant for mitigation of adverse cumulative impacts, or to avoid, minimize, or mitigate cumulative impacts? The application should discuss mitigation that may be required by local, state, and federal authorities, including information regarding restoration actions by separate entities, required mitigation of other projects, or voluntary mitigation and enhancement by the entity taking an action. refer to the cover memo of ISG-026 for more guidance on mitigation				
8	All	All resource specialists	1	All resource specialists	Does the application provide a basis for the conclusion?				

Row	Discipline	Subject Matter Expert	Priority	Issue Area/Topic (ESRP, Reg, or RG Section)	Review Area/Topic	2. As applicable, does the ER address the items required by regulation (e.g., 10 CFR 51.45, 51.49, 51.50, and 10 CFR Part 52) and by RG 4.2? (Completeness) (Yes/No)	3. Is the ER discussion technically sufficient for this area/topic? (Sufficiency) (Yes/No)	4. Can the technical deficiency be resolved through the RAI process or at the site audit? (Yes/No)	5. Remarks/Notes: If a “No” for either completeness or sufficiency has been entered in Column 2 or 3, identify deficiency(ies) and provide details. If a “Yes” for both completeness and sufficiency, provide the ER section and/or page number where information was found and any other pertinent information.
9	All	All resource specialists	1	All resource specialists	1. Is the following material found and cited in the Application? Does the evaluation findings in the application follow the guidance in ISG-26 attachment 4? If the impact is SMALL – Provide the basis for the conclusion and describe whether or not further mitigation beyond that described in Chapters 4 and 5 would be warranted. If the impact is MODERATE or LARGE - Summarize the basis for the conclusion. The principal contributor to the MODERATE or LARGE rating could be due to the proposed project (construction, preconstruction, or operations), the current conditions (i.e., the current degraded state of the resource), or other current and/or reasonably foreseeable projects. In the next paragraph, state the NRC-incremental impact and provide a discussion as to whether the NRC-authorized activity is a significant contributor to the MODERATE or LARGE impact. Sufficient information should be provided to show whether the NRC-authorized activity caused the cumulative impact to go from SMALL to MODERATE or MODERATE to LARGE. For example, if the NRC authorized increment is SMALL, but the impacts from preconstruction, the existing condition, or other projects are the principal contributors to the MODERATE rating, state this. Another possibility could be that several projects (including the proposed project) are all individually minor, but when considered together result in a MODERATE or LARGE impact (e.g., no one project is the principal contributor). For other than a SMALL impact, discuss if, and to what extent, the NRC authorized impact contributes to the other than SMALL impact.				
10	All	All resource specialists	1	ISG-26 Attachment 4	Has the applicant provided cumulative information at the reconnaissance level to characterize the cumulative impacts at the alternative sites? Tables listing other projects similar to those for the proposed project.				