DSER FOIA 2008-0096
1 of 4

November 7, 2007

MEMORANDUM TO: Michael R. Gartman, Chief
ESBWR/ABWR Projects 2 Branch
Division of New Reactor Licensing
Office of New Reactors

FROM: William F. Burton, Chief */RA/*
Environmental Projects Branch 1
Division of Site and Environmental Reviews
Office of New Reactors

SUBJECT: ACCEPTANCE REVIEW RESULTS FOR THE SOUTH TEXAS PLANT NUCLEAR OPERATING COMPANY COMBINED LICENSE APPLICATION (TAC NO. RA0420)

The Environmental Projects Branch 1 (RAP 1) has completed its acceptance review of the South Texas Plant Nuclear Operating Company (STPNOC) Combined License application (COLA) submitted by NRG Energy. This review covered Part 3 of the COLA, which is the Environmental Report (ER) for which RAP 1 has primary review responsibilities and, in addition, applicable documentation referenced in NUREG 1555, ESRP and Regulation Guide 4.2. The U.S. Nuclear Regulatory (NRC) staff reviewed Part 3, the ER of the COLA which contains following chapters:

- Chapter 1
- Chapter 2
- Chapter 3
- Chapter 4
- Chapter 5
- Chapter 6
- Chapter 7
- Chapter 8
- Chapter 9
- Chapter 10

In addition, this memorandum summarizes the results of the Acceptance Review and includes an enclosure which contains the results of the review in tabular format in accordance to Table 1 of Attachment D of NRO-REG-100.

CONTACT: William Burton, DSER/RAP1
301-415-6332

A15

attachment 1
ML073110450
88 pages (~~not printed~~) attached

Completeness and Sufficiency

The NRC staff finds that the STPNOC ER meets the completeness requirement of the Acceptance Review. However, during the sufficiency review process, the NRC staff identified technical deficiencies. Most of the deficiencies can be addressed during the site audit or through the request for additional information (RAI) process. However, four specific issues were identified that could potentially result in changes to planning assumptions considered in development of the baseline review schedule. Although the NRC staff has identified these four technical deficiencies as potentially impacting the baseline review schedule, the issues should not prevent the NRC staff from moving forward with the overall environmental review process (ERP).

The four issues are the alternative site selection process, the cultural and historic resources analysis, ecological monitoring and telling the story. The NRC staff would like to note that each of these issues was discussed with the applicant during the pre-application site visit in June 2007. These issues are outlined below and specific details of each of the four issues are included in the attached table.

Alternative Site Selection Process:
The discussion of the alternative site selection process lacks the detail necessary to understand the decision-making points that result in the selection of the final alternative sites. There is no information provided regarding how many sites were considered, where they were located, or why specific sites were eliminated. The missing information needs to be included to connect the region of interest and the selected alternative sites. The information provided in the ER is not sufficient to enable the NRC staff to determine if the alternative sites are among the best available sites.

Cultural and Historic Resources Analysis:
An adequate cultural resources survey was not conducted for the STP site and surrounding area. The ER analysis relies heavily on the survey conducted in 1973 for Units 1 and 2. During this survey, only a small fraction of the entire 12,200 acre site was visually inspected for signs of cultural resources. In addition, the previous study neither included information nor followed methodologies that are now standard in cultural resource surveys to establish compliance with federal resource conservation laws. An assessment was conducted for the site in 2007, but the assessment and its findings are not described in the ER.

The description of the consultation with the Texas State Historic Preservation Officer (SHPO) is incomplete. Artifactual material was found by the NRC staff and the applicant's staff consultant during the pre-application site visit in June 2007; however, the material was neither described nor evaluated in the ER.

Ecological Monitoring:
The ER provides information on aquatic species in the Colorado River prior to 1991, at which time the river was redirected from its flow into the Gulf of Mexico to its current flow into East Matagorda Bay. This redirection may have altered aquatic habitat, (e.g., such as river flows, substrate, and the influx of saltwater) it is not reported in the document and is assumed to be unknown. Alteration of one or more of these habitat components may or may not have altered species assemblages at the site from those recorded prior to 1991. Current aquatic species

assemblages at the site (and thus associated impacts) can only be determined via an adequate aquatic monitoring program. The ER describes a monitoring program that began in June 2007. However, the specified monitoring locations do not include the intake and discharge structures on the Colorado River. The description of the monitoring program indicates that only fish will be evaluated, and other aquatic resources (e.g., shellfish, benthic invertebrates) are not included. In addition, it is unclear how many months of monitoring have been completed, and the data collected to date have not been provided.

Telling the Story:
In most of the sections, the NRC staff found that the document lacks the detail necessary to understand the decision-making points to arrive at their conclusions. For example, a section in the ER is started and then is concluded without explaining the detail to arrive at their conclusions. The ER does not provide a systematic approach from start to finish. For example, the staff has found the following sections were lacking the detail or telling the story: cultural resources, aquatic and terrestrial ecology, socioeconomics, environmental justice, air quality, alternatives and meteorology.

Scheduling

The applicant, NRG Energy, has given a verbal agreement to provide a schedule by Friday, November 9, 2007 when the lacking information will be provided to the NRC. Since this information has not been received by the NRC at this present time, the schedule is undetermined as the NRC staff will need the lacking information discussed above to determine if there will be a schedule impact or not. The areas highlighted in Table 1 and marked as no or unknown in column seven of the table is information that is needed from the applicant. Therefore, the NRC staff cannot predict the impact on the schedule.

Review Dependencies

RAP1's detailed ER technical review of the STPNOC COLA is independent of other ongoing application reviews by the NRC staff.

Project No.: 749

Enclosure:
As Stated

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DATE	11/06/07	11/07/07	11/06/07	11/07/07

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Memo to Michael R. Gartman from William Burton dated: November 7, 2007

SUBJECT: ACCEPTANCE REVIEW RESULTS FOR THE SOUTH TEXAS PLANT NUCLEAR OPERATING COMPANY COMBINED LICENSE APPLICATION (TAC NO. RA0420

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Table 1. Environmental Report Acceptance Review
South Texas Project Units 3 and 4

		Completeness and Technical Sufficiency Which Form Basis for Acceptability for Docketing				Changes to Planning Assumptions to be Considered in Development of Baseline Review Schedule			Review Dependencies Among Concurrent Reviews	
1. Issue Area/Topic (ESRP, Reg or RG Section)	**Sufficiency Review Question** Is the following material found and cited in the Environmental Report, Site Safety Analysis Report, or Site Redress Plan?	2. Does the ER address the items required by regulation (refer to 10 CFR 52.80(b) and RG 4.2? *(Completeness)* **(Yes/No)**	3. Is ER issue area technically sufficient for this review area/ topic? *(Sufficiency)* **(yes/no)**	4. Can the technical deficiency be resolved through the RAI process *or at the site audit?* **(yes/no)**	5. If **no**, for either completeness or technical sufficiency, identify deficiency(ies) *and provide details. Note specific section in the ER applicable to the deficiency.*	7. Are the pre-baseline review schedule and estimated staff-hours appropriate for the issue area? **(yes/no)** *Answer "yes" if items 2 and 3 are "yes," or if item 4 is yes. Answer "no," if item 4 is "no."*	8. For each **no**, identify the change (or basis for change). *(If able to estimate the impact, labor effort, or schedule delay, provide estimate. Otherwise leave blank.)*	9. Identify the total review time in staff-hours.	10. Can the review of the issue area be completed without the completion of a concurrent review? *(Is the section technically bound to another ESRP section?)* **(yes/no)**	11. For each **no**, identify which issue area section. *Provide the ESRP section number and title impacted by the noted deficiency.*
1.1	Full names of all organizations (e.g., utilities and municipalities) sharing ownership of the proposed project.	Yes	Yes			Yes	NA		NA	NA
1.1	Name of the organization designated as the applicant. This organization is the contact with NRC during the licensing process and will be responsible for construction and operation of the proposed project.	Yes	Yes			Yes	NA		NA	NA
1.1	Site location with respect to nearby towns and natural features.	Yes	Yes			Yes	NA		NA	NA
1.1	Number and type of reactors, highest anticipated gross thermal megawatt output, and net electrical output.	Yes	Yes			Yes	NA		NA	NA
1.1	Cooling system description (intake type, heat dissipation type, discharge type, source of cooling water).	Yes	Yes			Yes	NA		NA	NA
1.1	Transmission system description (kilometers of new corridors, new towers or conductors on existing corridors).	Yes	Yes			Yes	NA		NA	NA
1.1	The nature of the proposed action and the constraints that are placed on the review because of the type of action.	Yes	Yes			Yes	NA		NA	NA

1. Issue Area/Topic (ESRP, Reg or RG Section)	Sufficiency Review Question Is the following material found and cited in the Environmental Report, Site Safety Analysis Report, or Site Redress Plan?	Completeness and Technical Sufficiency Which Form Basis for Acceptability for Docketing				Changes to Planning Assumptions to be Considered in Development of Baseline Review Schedule			Review Dependencies Among Concurrent Reviews	
		2.	3.	4.	5.	7.	8.	9.	10.	11.
1.1	Proposed dates for start and completion of major activities.	Yes	Yes			Yes	NA		NA	NA
1.2	The name of each related authorization, including the responsible agency and the applicable law, ordinance, or regulation.	Yes	Yes			Yes	NA		NA	NA
1.2	The date of application/initiation and scheduled date of issuance of each authorization.	No	No	Yes	Authorization status is discussed but initiation and anticipated issuance dates not provided (Section 1.2)	Yes	NA		Yes	NA
1.2	The current status of each authorization (from consultation with Federal, State, regional, local, and affected Native American tribal agencies).	Yes	Yes			Yes	NA		NA	NA
1.2	The principal environmental factors to be covered by the authorization.	Yes	Yes			Yes	NA		NA	NA
2.1	Site location: State; county; latitude and longitude Universal Transverse Mercator (UTM) coordinates; and township, range, and section(s).	Yes	Yes			Yes	NA		NA	NA
2.1	Area of the site.	Yes	Yes			Yes	NA		NA	NA
2.1	Distance and direction from the nearest major city.	Yes	Yes			Yes	NA		NA	NA
2.1	Distance and direction from several nearby towns and readily recognized landmarks, including major nearby highways, rivers, or other bodies of water, within 10 km (6 mi) of the facility site.	Yes	Yes			Yes	NA		NA	NA
2.1	For geographical orientation, simplified maps (based on an official source of information such as a State highway map) centered on the facility site: one general map with about an 80-km (50-mi) radius and a second map with about a 10-km (6-mi) radius of the facility (orient true north at the top of the map).	Yes	Yes			Yes	NA		NA	NA
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) (from the ER upon request [reproducible copy] from the applicant).	Yes	Yes			Yes	NA		NA	NA

1. Issue Area/Topic (ESRP, Reg or RG Section)	Sufficiency Review Question Is the following material found and cited in the Environmental Report, Site Safety Analysis Report, or Site Redress Plan?	Completeness and Technical Sufficiency Which Form Basis for Acceptability for Docketing				Changes to Planning Assumptions to be Considered in Development of Baseline Review Schedule			Review Dependencies Among Concurrent Reviews	
		2.	3.	4.	5.	7.	8.	9.	10.	11.
2.2.1	Land areas (hectares) devoted to major uses within the site boundary.	Yes	Yes			Yes				
2.2.1	Maps showing major land uses in the site vicinity with land uses classified consistently with standard U.S. Geological Survey categories.	Yes	Yes			Yes				
2.2.1	Egress limitations from the area surrounding the site.	Yes	Yes			Yes				
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.	Yes	Yes			Yes				
2.2.1	Special land uses (e.g., recreation) other than major land uses in the site and vicinity that could be significantly affected by construction of the proposed project (from consultation with local agencies).	NA	NA			NA				
2.2.1	Ownership of mineral resources (i.e., whether the mineral resources are owned by the surface landowner or by another owner).	Yes	Yes			Yes				
2.2.1	Land-use plans that include the site and vicinity within their scope (from applicable Federal, State, regional, local, and affected Native American tribal planning agencies).	NA	NA			NA				
2.2.2	Proposed routes for corridors that will be used for construction of transmission lines from the station site to an interconnecting point or points on the existing high-voltage transmission systems.	NA	NA			NA				
2.2.2	Proposed routes of access corridors to serve the proposed station.	NA	NA			NA				
2.2.2	Transmission corridor lengths, widths, and areas.	Yes	Yes			Yes				
2.2.2	Land-use restrictions, if any, contained in any easements (from consultation with land resource agencies).	NA	NA			NA				
2.2.2	Land use within the transmission corridors using the categories defined by the U.S. Geological Survey. Land use information should be subdivided into corridor segments having predominantly similar land-use types (from consultation with applicable Federal, State, regional, local, and affected Native American tribal agencies).	Yes	Yes			Yes				

1. Issue Area/Topic (ESRP, Reg or RG Section)	Sufficiency Review Question Is the following material found and cited in the Environmental Report, Site Safety Analysis Report, or Site Redress Plan?	Completeness and Technical Sufficiency Which Form Basis for Acceptability for Docketing				Changes to Planning Assumptions to be Considered in Development of Baseline Review Schedule			Review Dependencies Among Concurrent Reviews	
		2.	3.	4.	5.	7.	8.	9.	10.	11.
2.2.2	Identification of offsite areas by land use, size, and location (from site visit, and consultation with Federal, State, regional, local, and Native American tribal agencies).	NA	NA							
2.2.2	Local and regional land-use plans of State, regional, and local agencies (from consultation with Federal, State, regional, local, and affected Native American tribal agencies).	NA	NA							
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, floodplains, wildlife refuges, and wilderness areas) (from consultation with Federal, State, regional, local, and affected Native American tribal agencies).	NA	NA							
2.2.3	Maps showing major land use within the region. Land use categories should be consistent with those defined by the U.S. Geological Survey (from consultation with resource agencies).	NA	NA							
2.2.3	Land areas devoted to major uses within the region.	Yes	Yes			Yes				
2.2.3	Principal agricultural products of the region and average annual yields.	Yes	Yes			Yes				
2.2.3	Maps showing the major transportation and utility networks within the region.	Yes	Yes			Yes				
2.2.3	Maps showing major public and trust land areas in the region.	No	No	Yes	Locations of major public and trust land areas within the region are available via the Internet.	Yes				
2.2.3	Maps showing the major transportation and utility networks within the region.	Yes	Yes			Yes				
2.3.1	For surface-water bodies used as a heat sink, maximum, average-maximum, average, average-minimum, and minimum monthly temperature of the water body	No	No	Yes	Temperature data not provided. ER Section 2.3.1.	Yes	NA		NA	NA

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
2.3.1	For surface-water bodies and wetlands, estimated erosion characteristics and sediment transport, including rate, bed, and suspended load fractions, and graduation analyses; 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.	Yes	No	Yes	Only partial information on bedloads available in ER section 2.3.1	Yes	NA		NA	NA
2.3.1 (estuaries and oceans only)	o shoreline and bottom descriptions, including seasonal variations due to sediment transport o tidal current patterns (velocities and phases), range, and excursion o nontidal circulation patterns, including frequency distributions of current speed, direction, and persistence o temperature and salinity distribution (horizontal and vertical), including temporal variations o detailed bathymetry in the vicinity of the station intake and outfall o for estuaries, maximum, average maximum, average, average minimum, and minimum monthly river discharge and flushing characteristics	Yes	Yes			Yes	NA		NA	NA
2.3.1 (fresh water streams only)	o a list of major streams, size of drainage areas, and gradient o maximum, average maximum, average, average minimum, and minimum monthly flow o flood frequency distributions, including levee failures o flood control measures (reservoirs, levees, flood forecasting) o historical drought stages and discharges by month, and the 7-day once-in-10-years low flow o important short-duration flow fluctuations (e.g., diurnal release variations from peaking operation of upstream hydroelectric project) o within the influence of the intake and discharge structures, velocity distribution (horizontal and vertical), bathymetry at and near the intake structure, bathymetry at and	Yes	No	Yes	Partial information on velocity distributions and bathymetry near the intake. ER Section 2.3.1.	Yes	NA		NA	NA

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
	downstream of the discharge structure, and stream cross-sections o other hydrographic modifications (e.g., diversion dams, channelization) o a list of wetlands and flood plains and their seasonal characteristics									
2.3.1 (ground-water)	o the areal extent of aquifers, recharge and discharge areas, elevation and depth, and geologic formations o piezometric contour maps and hydraulic gradients (historical, if available, and current) o flow travel times o soil properties, including permeabilities or transmissivities, storage coefficients or specific yields, total and effective porosities, clay content, and bulk densities o interactions between site surface and groundwaters o historical and seasonal trends in groundwater elevation or piezometric levels; interactions between different aquifers o recharge rates, soil moisture characteristics, and moisture content in vadose zone o existence of any local aquifers designated or proposed to be designated as "sole source aquifers."	Yes	No	Yes	Only partial groundwater levels available from Dec 2006 to June 2007 in ER section 2.3.1	Yes	Potential for schedule impact pending data collection.			
2.3.1 (lakes and impoundments only)	o a description of lake or impoundment o where influenced by the intake or discharge structures, or vice versa, size, location, and elevation of outlets o a summary description of reservoir operating rules o annual yield and dependability o variations in inflows, outflows, water surface elevations, and storage volumes and retention time o net loss, including evaporation and seepage o current patterns, including frequency distributions of current speed, direction, and persistence	Yes	Yes			Yes	NA		NA	NA

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
	o temperature distribution (horizontal and vertical) and stratification and seasonal variations of density-induced currents o detailed bathymetry in vicinity of station intake and outfall									
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: o maps showing the relationship of the site to surface-water bodies that could affect or be affected by plant water use o maps (and cross sections where feasible) showing those portions of groundwater aquifer systems that could be affected by plant withdrawals and/or discharges	Yes	Yes			Yes	NA		NA	NA
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: o locations of diversions and returns with respect to the site and the water body (from the site visit, the general literature, and consultation with Federal, State, regional, local, and affected Native American tribal agencies) o identification of the water body (from the ER and the general literature) o the average monthly withdrawal and return rate for each diversion by use category	Yes	No	Yes	Locations of surface water users on Colorado River in ER Section 2.3.2 is incomplete.	Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
2.3.2	Quantitative and qualitative description of recreational, navigational, instream, and other nonconsumptive present and known future water uses. For a 10-km (6-mi) radius, 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): o identification of water bodies and locations with respect to the site (maps may be useful) o the kind and location of activity on the water body (maps may be useful) o the use rate with time variation.	Yes	Yes			Yes	NA		NA	NA
2.3.2	Summary of statutory and other legal restrictions relating to water use or specific water-body restrictions on water use imposed by Federal or State regulations	Yes	Yes			Yes	NA		NA	NA
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 water bodies, and the magnitude and nature of the pollutant discharges, including spatial and temporal variations	No	No	Yes	Listing of pollutant sources, their locations, and their magnitude is needed in ER Section 2.3.2.	Yes	NA		NA	NA
2.3.2 and 3.3.1	A water-use diagram for the plant showing: o flow rates to and from the various water systems (e.g., circulating water system, sanitary system, radwaste and chemical waste systems, service water systems) o points of consumption o source and discharge locations A water-use diagram of other station water uses (i.e., all facilities not associated with the proposed plant) showing: o flow rates to and from the facility o average water consumption o maximum water consumption	Yes	Yes			Yes	NA		NA	NA

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
	Data and narrative description for: o various plant water systems, their interconnections, and their operational interdependence and coordination o maximum water consumption o water consumption during periods of minimum water availability o average operation by month and by plant operating status									
2.3.3	The mean, range, and temporal and spatial variations of the surface-water and groundwater-quality characteristics. 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), alkalinity, chlorides, sulfate, sodium, potassium, calcium, magnesium, heavy metals (e.g., Hg, Pb), pH, phytoplankton (chlorophyll *a*), and indicator microorganisms (e.g., total coliform, fecal coliforms, fecal streptococci) For groundwaters: the above surface-water data, minus phytoplankton and with silica, iron, carbon dioxide, and bicarbonate added	Yes	No	Yes	Partial information on water quality parameters in ER Section 2.3.3.	Yes	NA		NA	NA
2.3.3	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., water bodies at or near the site that do not meet established water-quality standards)	No	No	Yes	Will require a list of all water bodies and their 303(d) listing in ER Section 2.3.3.	Yes	NA		NA	NA

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
2.4.1	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? Did the applicant include a map that identifies "important" terrestrial habitats on and in the vicinity of the site?	Yes	No	Yes	ER 2.4.1: Conflicting information between sections (4.3 and 2.4.1) in designating game species as recreation-ally important. No clear designation of waterfowl as important species.	Yes				
2.4.1	Did the applicant describe any "important" species and their spatial and temporal distributions on and in the vicinity of the site, 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?	Yes	No	Yes	ER 2.4.1: Inadequate descriptions of life history information for important species potentially found on STP and need addi-tional information regarding the presence and habitat use of brown pelicans on site and potential for seasonal occurrence or habitat use by state-listed species.	Yes				
2.4.1	Has the applicant consulted with local offices of the appropriate Federal, State, regional, local, and affected Native American tribal agencies to determine the possible presence of such species?	Yes	Yes			Yes				
2.4.1	Did the applicant identify and describe the species' composition, the spatial and temporal distribution, abundance, and other structural and functional attributes of biotic assemblages that could be impacted by the proposed action?	Yes	Yes			Yes				
2.4.1	Did the applicant identify and describe the location of wildlife sanctuaries and natural areas that might be impacted by the proposed action?	Yes	Yes			Yes				
2.4.1	Did the applicant list of species that are of concern as disease vectors or pests?	Yes	Yes			Yes				

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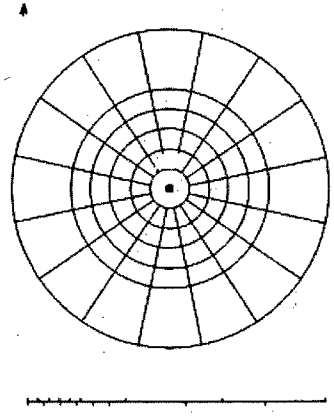
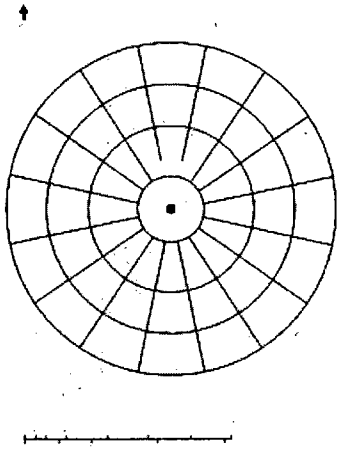
		2.	3.	4.	5.	7.	8.	9.	10.	11.
2.4.1	Did the applicant describe the natural and man-induced effects (e.g., farming, logging, grazing, and burning), preexisting environmental stresses (e.g., infestations, epidemics, and catastrophes), and the current ecological conditions that are indicative of such stresses?	Yes	Yes			Yes				
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?	Yes	No	Yes	ER 2.4.1: Insufficient detail regarding areas surveyed and methods used	Yes				
2.4.1	Did the applicant identify any important waterfowl areas in the proposed transmission lines corridors, a list of descriptions of these areas and data on the local abundance and distribution of waterfowl, their seasonal status, and local flight patterns?	Yes	No	Yes	ER 2.4.1 and 2.2.2: Land use classification and presence/absence of wildlife refuges described; no description of waterfowl use of transmission corridors or local flight patterns—relevant to the Great Texas Coastal Birding Trail and the Central Flyway migration route	Yes				
2.4.1	Is the available site-specific data adequate, accurate, and complete?	Yes	No	Yes	ER 2.4.1: Lacks sufficient detail regarding current abundance, and composition of species found on site.	Yes				
2.4.2	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? Did the applicant include a map that identifies "important" aquatic habitats or bodies of water on and in the vicinity of the site?	Yes	Yes §2.4.1.1 (sea turtles), 2.4.2.2 (Col Riv & Bay), §2.4.2.3 (other aquatic), §2.4.2.4 (EFH),			Yes				

1. Issue Area/Topic (ESRP, Reg or RG Section)	Sufficiency Review Question Is the following material found and cited in the Environmental Report, Site Safety Analysis Report, or Site Redress Plan?	Completeness and Technical Sufficiency Which Form Basis for Acceptability for Docketing				Changes to Planning Assumptions to be Considered in Development of Baseline Review Schedule			Review Dependencies Among Concurrent Reviews	
		2.	3.	4.	5.	7.	8.	9.	10.	11.
			§2.4.2.6 (trans. lines)							
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 water body), including, as appropriate, their relative abundance, critical habitat, and their life histories—critical life stages, spawning areas, nursery grounds, food habits, feeding areas, wintering areas, migration areas?		No	Yes	§2.4.2 does not describe aquatic species in Colorado River sufficiently. Need info on aquatic species in river since river flow was directed into East Matagorda Bay.	Yes				
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 possible presence of such species? Determine when was the last time there was consultation with agencies.	Yes	No	Yes	Resource agencies were sent letters (§2.4.1.1, 5.3.1, 5.6.2.2), but did not receive responses to all letters. NRC will need to consult with resource agencies to acquire information.	Yes				
2.4.2	Did the applicant identify and describe the species composition, the spatial and temporal distribution, abundance, and other structural and functional attributes of biotic assemblages that could be impacted by the proposed action?		No	Yes	§2.4.2 does not describe aquatic species in Colorado River sufficiently. Need info on aquatic species in river since river flow was directed into East Matagorda Bay.	Yes				
2.4.2	Did the applicant identify and describe the location of wildlife sanctuaries and natural areas that might be impacted by the proposed action?		Yes §2.4.2			Yes				
2.4.2	Did the applicant list species that are of concern as disease vectors or pests? Did the applicant list any nuisance or invasive species of concern (e.g., *Corbicula* sp. or *Mytilus* sp.)? These species are capable of blocking or bio-fouling the cooling water intake system or can cause other significant problems.	Yes	Yes §2.4.2.3. 1.2			Yes				

1. Issue Area/Topic (ESRP, Reg or RG Section)	Sufficiency Review Question Is the following material found and cited in the Environmental Report, Site Safety Analysis Report, or Site Redress Plan?	Completeness and Technical Sufficiency Which Form Basis for Acceptability for Docketing				Changes to Planning Assumptions to be Considered in Development of Baseline Review Schedule			Review Dependencies Among Concurrent Reviews	
		2.	3.	4.	5.	7.	8.	9.	10.	11.
2.4.2	Did the applicant describe the natural and man-induced effects (e.g., farming, logging, grazing, burning), preexisting environmental stresses (e.g., infestations, epidemics, catastrophes), and the current ecological conditions that are indicative of such stresses?		No	Yes	§2.4.2 discusses several stresses; however, the description of the aquatic resources in the river since 1991 flow changes is not sufficient.	Yes				
2.4.2	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?		Yes §2.4.2.1.1.1, §5.3.1.2.1, §6.5.1.2			Yes				
2.4.2	Is the available site-specific data adequate, accurate, and complete?		No	Yes	§2.4.2 does not describe aquatic species in Colorado River sufficiently. Need info on aquatic species in river since river flow was directed into East Matagorda Bay.	Yes				
2.5.1	Sector chart superimposed on a map of the site vicinity extending to a 16-km (10-mi) radius: 	Yes	Yes			Yes				

1. Issue Area/Topic (ESRP, Reg or RG Section)	Sufficiency Review Question Is the following material found and cited in the Environmental Report, Site Safety Analysis Report, or Site Redress Plan?	Completeness and Technical Sufficiency Which Form Basis for Acceptability for Docketing				Changes to Planning Assumptions to be Considered in Development of Baseline Review Schedule			Review Dependencies Among Concurrent Reviews	
		2.	3.	4.	5.	7.	8.	9.	10.	11.
2.5.1	Sector chart superimposed on a map of the site region extending to an 80-km (50-m) radius: 	Yes	Yes			Yes				
2.5.1	Table appropriately keyed to Figures 1 and 2 that provides the projected populations within each sector of the chart.	Yes	Yes			Yes				
2.5.1	Demographic Characteristics of the 0-km to 80-km (0-mi to 50-mi) Enclosed Population. This should include specific reporting of population characteristics and projections for the emergency planning zone defined as the area within a 16-km (10-mi) radius of the facility. Demographic characteristics and projections should also be shown for the "low-population zone" or "exclusion area" populations. Demographic characteristics should include age and sex distribution, transient or migrant population, racial and ethnic background, and income distribution (from the ER, latest decennial Census, other local/regional demographic sources such as planning commissions).	Yes	No	Yes	Reported at county. Can be resolved by RAI.	Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
2.5.2	Information related to the area's economic base, including: - important regional industry by category, including employment - size and description of the heavy construction industry and construction labor force within the region - total regional labor force - regional unemployment levels and future economic outlook - characterization of incremental onsite labor, peak number of workers and duration of the peak, the number of workers expected to commute daily, the number of workers expected to require temporary and permanent housing, and the inventory of rental and of permanent housing within 80 km of the site.	Yes	Yes		Incremental onsite labor is found in ER Chapter 3	Yes				
2.5.2	information related to the area's political structure, including - regional political jurisdictions and tax districts - identifying those tax districts that will be directly affected by facility construction or operation - local and regional planning and administrative organizations.	Yes	Yes			Yes				
2.5.2	Social-structure information, including major community structures.	No	No	Yes	Most community structure information appears to be omitted	Yes				
2.5.2	Housing information, including the sales and rental market in the 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.	Yes	Yes			Yes				
2.5.2	Information about the local educational system (regional primary and secondary schools and higher education institutions), including capacity and present percentage of use.	Yes	Yes			Yes				
2.5.2	Public and private recreational facilities and opportunities, including present and projected capacity and percentage of use.	Yes	No	Yes	No information about projected future use	Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
2.5.2	Regional tax structure and distribution of the present revenues to each jurisdiction and district.	Yes	Yes			Yes				
2.5.2	Local plans concerning land use and zoning that are relevant to population growth, housing, and changes in land-use patterns.	Yes	No	Yes	Counties do not have land use plans. Some cities have land use plans. Need to obtain.	Yes				
2.5.2	Social services and public facilities, including: - present and projected water and sewer/sewage disposal facilities, including present capacity and projected percentage of use - present and projected police and fire capabilities, and emergency planning responsibilities - location of hospitals, number of medical doctors, and specialized health facilities, including present and projected capacity.	Yes	Yes			Yes				
2.5.2	Information on highways and transportation systems, for example: - regional and local highway systems, including carrying capacity and condition of roads and highways - availability and type of public transportation - modifications that might affect traffic flow to and from the station site.	Yes	No	Yes	Capacity information may not be complete	Yes				
2.5.2	Information about distinctive communities, including the characteristics of the State, Native American tribes, and the local region that may identify them as distinctive communities (e.g., historic districts, tourist attractions, cultural resources, and visual resources).	No	No	Yes	None are mentioned. It is not clear whether this is because there are none.	Yes				
2.5.3	A detailed description of any archaeological or historical surveys of the proposed site, transmission line routes, or access corridors, including the physical extent of the survey, including why areas were not surveyed; techniques used; qualification so the surveyor; and findings.	No	No	No	The 1975 survey was mischaracterized and surveys and assessment done in 2007 were not described (2.5.3)	No			Yes	4.1.3, 5.1.3

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
2.5.3	Comments of any organizations contacted by the applicant to locate and assess archaeological and historic resources located on or near the proposed station site.	No	No	Yes	Only the Texas Historical Commission was contacted so some effort should be made to contact tribes or historical organizations. (2.5.3)	Yes			No	4.1.3
2.5.3	A description of cultural resources within the proposed site, proposed transmission line routes, or access corridors, and offsite areas that are in or eligible for inclusion in the National Register or are included in State or local registers or inventories of historic and archaeological resources.	Yes	No	No	The site has not been surveyed adequately and artifactual material found during the pre-ap at STP 3 & 4 was not described (2.5.3)	No			No	4.1.3
2.5.3	A description of cultural resources within 16 km (10 mi) of the proposed site, or 2 km (1.2 mi) of proposed transmission line routes, or access corridors, and offsite areas that are in or eligible for inclusion in the National Register or are included in State or local registers or inventories of historic and archaeological resources.	Yes	Yes			Yes				
2.5.3	A list of organizations and individuals contacted by the applicant also provided significant information concerning the location of cultural and historical properties.	Yes	No	Yes	Only the Texas Historical Commission was contacted so some effort should be made to contact tribes or historical organizations. (2.5.3)	Yes				
2.5.4	Comments of any organizations contacted by the applicant that locate and assess uniquely vulnerable minority and low-income communities located on or near the proposed station site.	Yes	No	Yes	Will need to follow up to obtain details on the contacts and comments.	Yes				
2.5.4	General description (with maps) of the location of all minority and low-income populations within the environmental impact area of each alternative site, including offsite areas that can expect significant environmental impact as a result of the proposed project construction or operation.	Yes	Yes			Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
2.5.4	More specific description of any unique minority or low-income communities within each environmental-impact area that are likely to be disproportionately affected by the proposed project construction or operation.	Yes	No	Yes	The description is very short. No impacts noted. Are there more details on the thoroughness of the search?	Yes				
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.	Yes	Yes			Yes				
2.7	A description of the regional air quality, including nonattainment or maintenance areas.	Yes	Yes			Yes				
2.7	A description of severe weather phenomena and its frequency.	Yes	No	Yes	ER Sections 2.7.3.3 and 2.7.3.5. Missing strike probabilities for tornadoes and hurricanes	Yes				
2.7	Monthly and annual air temperature and dewpoint temperature summaries, including averages, extremes, and diurnal range.	Yes	Yes		The detail requested by the ESRP is excessive. There may be some RAIs to cover nits	Yes				
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.	Yes	Yes		The detail requested by the ESRP is excessive. There may be some RAIs to cover nits	Yes				
2.7	Estimated monthly mixing-height data, including frequency and duration (persistence) of inversion conditions and the methods used to provide the estimates.	Yes	Yes		The detail requested by the ESRP is excessive. There may be some RAIs	Yes				
2.7	Monthly and annual wind roses at all height(s) at which data on wind characteristics are applicable.	Yes	Yes			Yes				
2.7	Monthly and annual summaries of atmospheric stability.	Yes	Yes			Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
2.7	Short- and long-term diffusion estimates of normalized concentration (χ/Q) and/or relative deposition (D/Q) and the period of onsite meteorological data used in the calculations.	Yes	No	Yes	ER Sec. 2.7.4.4. Meteorological data are old. Why weren't more recent data used? There is an inconsistency between the discussion of XOQDOQ modeling in Sections 2.7.6.2 and 6.4.2.1	Yes				
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.	NA	NA			NA				
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 (from consultations with Federal, State, local, and affected Native American tribal agencies).	NA	NA			NA				
2.8	Descriptions of any other planned Federal projects or activities that must be completed as a condition of facility construction or operation (from consultations with appropriate Federal agencies).	NA	NA			NA				
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 (from consultation with appropriate Federal agencies).	NA	NA			NA				
2.8	Descriptions of planned Federal projects that are contingent on facility construction and operation (from consultation with appropriate Federal agencies).	NA	NA			NA				
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.	Yes	Yes			Yes	NA		NA	NA

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
3.1	Topographic maps of the site and vicinity (refer to ESRP 2.2) showing facility and station layout, the exclusion area, site boundary, 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.	Yes	No	Yes	A topographic map is provided, along with some other figures, but these lack some of the required detail, i.e., liquid and gaseous release points (and their elevations), meteorological towers, a clearly defined construction zone, indicating land to be cleared, waste disposal areas, and other buildings and structures (both temporary and permanent) (Section 3.1)	Yes	NA		Yes	NA
3.1	Description of the station, including proposed plans to seclude and screen the facilities and to architecturally integrate the buildings and landscaping into the environs.	Yes	Yes			Yes	NA		NA	NA
3.1	Aesthetic principles and concepts used in the facility design and layout.	Yes	Yes			Yes	NA		NA	NA
3.1	Representative ground-level photographs of the site on which major station features are super imposed. These should be taken from among the following typical vantage points when a visual impact from that location can be expected: - residential - commercial - industrial - educational - transportation corridors (air, auto, rail, pedestrian) - cultural (recreational, historic, archaeological).	Yes	Yes			Yes	NA		NA	NA
3.1	Low, oblique aerial photograph of the site and vicinity on which major station features are super imposed.	Yes	Yes			Yes	NA		NA	NA

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
3.1	An architectural rendering of the proposed project to include landscaping and all major station features.	Yes	Yes			Yes	NA		NA	NA
3.3.1	A narrative description of the various plant water systems, their interconnections, and their operational interdependence and coordination	Yes	Yes			Yes	NA		NA	NA
3.3.2	A description and purpose of the water treatment systems used in the plant including: o identification, quantities, and points of addition of chemicals and additives to be used by each system o operating cycles for each water treatment system for normal modes of plant operation (e.g., full power operation, shutdown/refueling, and startup)	Yes	Yes			Yes	NA		NA	NA
3.4.1	Descriptions of anticipated operational modes and the estimated periods of time that the system will operate in each mode including: o for each anticipated operational mode, quantities of heat generated, dissipated to the atmosphere, and released in liquid discharges o for each operational mode, water source and quantities of water withdrawn, consumed, and discharged.	Yes	No	Yes	Make-up water volume and frequency in ER Section 3.4.1 is required.	Yes	NA		NA	NA
3.4.1	Status of the NPDES permit and any 316(a/b) demonstrations	No	No	Yes	Status of NPDES permitting and 316(a/b) demonstrations for Units 3 and 4 are required.	Yes	NA		NA	NA
3.4.2	For INTAKE SYSTEMS, include: o a drawing of the intake structure showing the relationship of the structure to the water surface, bottom geometry, and shoreline o a description of the cooling water pumping facility o a description of the trash racks, traveling screens, trash baskets, and fish return devices o performance characteristics (e.g., flow rates, intake velocities) for the operational modes identified by the reviewer for ESRP 3.4.1	Yes	No	Yes	Flow velocities and discharges and associated durations to support operation of all four units are required in ER Section 3.4.2.	Yes	NA		NA	NA

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
	o performance characteristics for specific intake-related functions, such as de-icing, trash rack clearing, screen washing, trash basket removal, or fish return system operation o the location and description of components for the addition of chemicals (e.g., corrosion inhibitors, antifouling agents) to the intake system									
3.4.2	For DISCHARGE SYSTEMS, include: o drawings of the outfall structure, showing its location in the receiving water body, relation-ship to water surface, bottom geometry, and shoreline o a description of discharge canal or discharge lines o 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 o descriptions of specific discharge-related components (e.g., diffusers, fish barriers)	Yes	No	Yes	Discahrge rates, velocities, temperatures, and durations are needed for ER Section 3.4.2	Yes	NA		NA	NA
3.4.2	For HEAT DISSIPATION SYSTEMS, include: o the location of heat dissipation system components relative to other site features o 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 Table 3.4.2-1 and -2 of the ESRP) o site-specific meteorological data (from ESRP 2.7) o site-specific water supply data (from ESRP 2.3.1) o heat dissipation system performance analyses based on the manufacturer's design data and site-specific meteorological and hydrological data	Yes	No	Yes	No specific performance analysis of the heat dissipation system is included in ER Section 3.4.2.	Yes	NA		NA	NA
3.5	Sources of radioactive liquid and gaseous waste within the facility.	Yes	Yes			Yes				
3.5	Description of liquid and gaseous radioactive	Yes	Yes			Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
	waste management and effluent control systems.									
3.5	Process flow diagrams for liquid and gaseous radioactive waste management and effluent control systems.	Yes	Yes			Yes				
3.5	Identification of principal release points for radioactive materials to the environment.	Yes	Yes			Yes				
3.5	Identification of direct radiation sources within or onsite out-of-plant as solid waste (e.g., independent fuel storage).	No	No	Yes	Need direct rad sources	Yes				
3.5	Information relevant to estimating radioactive liquid and gaseous effluents.	Yes	Yes			Yes				
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).	Yes	Yes			Yes				
3.6.1	Descriptions of nonradioactive effluent treatment facilities.	Yes	No	Yes	3.6.1 contains no real description of effluent treatment facility	Yes				
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.	Yes	Yes		No seasonal variation provided	Yes				
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.	No	Yes	Yes	Need list of chemical processed through each system in 3.6.1	Yes				
3.6.1	The concentration factor on a seasonal basis for evaporative cooling systems.	No	No	Yes	Need concentration factor on seasonal basis in 3.6.1	Yes				
3.6.1	The average and maximum concentration of natural materials in effluent streams.	No	No	Yes	Need concentration of natural materials in effluent streams in 3.6.1	Yes				
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).	No	No	Yes	Need operating cycles for each effluent treatment system in 3.6.1	Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
3.6.1	The following list of data should be obtained: o descriptions of nonradioactive effluent treatment facilities o 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 o a list of chemicals processed through each system (e.g., corrosion inhibitors, antifouling agents), and total amounts used per year, frequency of use, and concentrations of these chemicals or their products in each waste stream o the concentration factor on a seasonal basis for evaporative cooling systems o the average and maximum concentration of natural materials in effluent streams o the operating cycles for each effluent treatment system for normal modes of plant operation (e.g., full power operation, shutdown/refueling, startup).	Yes	No	Yes	Partial description of nonradioactive effluent treatment facilities, missing constituent information at intake and discharge locations, missing concentration information for effluent streams, no description of operating cycles.	Yes	NA		NA	NA
3.6.2	A description of the systems (both temporary and permanent) to be provided.	Yes	Yes			Yes				
3.6.2	Anticipated quantity and characteristics of treated effluents.	Yes	No	Yes	Characteristics not provided in 3.6.2	Yes				
3.6.2	The ultimate disposal of treated effluents.	Yes	Yes			Yes				
3.6.2	Standards for the proposed sanitary system effluents.	No	No	Yes	Standards are not specifically called out for the proposed sanitary system effluents	Yes				
3.6.2	The National Pollutant Discharge Elimination System (NPDES) permit.	Yes	No	Yes	STP refers to TPDES and does not mention NPDES in 3.6.2	Yes				
3.6.2	The following list of data should be obtained: o a description of the systems (both temporary and permanent) to be provided o anticipated quantity and characteristics of treated effluents o the ultimate disposal of treated effluents	Yes	No	Yes	Missing standards for proposed sanitary system effluents.	Yes	NA		NA	NA

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
	o standards for the proposed sanitary system effluents o a copy of the NPDES permit (if available).									
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 SON, NON, hydrocarbons, and suspended particulates to be discharged annually.	Yes	Yes			Yes				
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.	Yes	Yes			Yes				
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.	Yes	No	Yes	No estimate of waste quantities or concentrations	Yes				
3.6.3	Procedures for any offsite disposal of wastes.	No	No	Yes	Provide procedures for any offsite waste disposal	Yes				
3.6.3	Procedures by which all effluents will be treated, controlled, and discharged to meet State and U.S. Environmental Protection Agency effluent limitation guidelines and new source performance standards.	Yes	Yes			Yes				
3.6.3	The following list of data should be obtained: o estimates of gaseous effluents (e.g., from diesel engines, gas turbines, heating plants, incinerators) released during plant operation, the location and elevation of release points, the frequency of their release and their treatment before release, and the total quantity of SOx, NOx, hydrocarbons, and suspended	Yes	No	Yes	Partial description of consultations with Federal, State, regional, local, and Native American tribal agencies.	Yes	NA		NA	NA

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	particulates to be discharged annually o applicable Federal, State, and tribal regional standards concerning atmospheric emissions from consultation with Federal, State, regional, local, and affected Native American tribal agencies o information concerning nonradioactive wastes not considered in ESRPs 3.6.1 and 3.6.2. Examples include 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 o procedures for any offsite disposal of wastes o procedures by which all effluents will be treated, controlled, and discharged to meet State and EPA effluent limitation guidelines and new source performance standards									
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 kilovolts per meter (kV/m), and the design bases for these values.	NA	NA			NA				
3.7	Predicted noise levels resulting from transmission-system operation.	Yes	Yes			Yes				
3.7	Basic structural design parameters, including illustrations and descriptions of towers, conductors, and other structures, with dimensions, materials, color, and finish.	NA	NA			NA				
3.7	The applicant should provide siting data for all potential corridors identified by the applicant using topographic maps (7.5- or 15-minute scale as a rule) or aerial photographs showing the proposed corridor or corridors and all existing	NA	NA			NA				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
	major high voltage corridors in the region.									
3.7	Lengths, widths, and area of corridors, including modification and/or use of existing corridors and other facilities for the proposed project.	NA	NA			NA				
3.7	General methods of construction (e.g., tower foundations, stringing, location of access roads, span length, and clearing of corridors).	NA	NA			NA				
3.7	When available, tower and substation locations.	NA	NA			NA				
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 kilovolts per meter (kV/m), and the design bases for these values.	NA	NA			NA				
3.7	Predicted noise levels resulting from transmission-system operation.	Yes	Yes			Yes				
3.7	Basic structural design parameters, including illustrations and descriptions of towers, conductors, and other structures, with dimensions, materials, color, and finish.	NA	NA			NA				
3.7	The applicant should provide siting data for all potential corridors identified by the applicant utilizing topographic maps (7.5- or 15-minute scale as a rule) or aerial photographs showing the proposed corridor or corridors and all existing major high voltage corridors in the region.	NA	NA			NA				
3.7	Lengths, widths, and area of corridors, including modification and/or use of existing corridors and other facilities for the proposed project.	NA	NA			NA				
3.7	General methods of construction (e.g., tower foundations, stringing, location of access roads, span length, and clearing of corridors).	NA	NA			NA				
3.7	When available, tower and substation locations.	NA	NA			NA				
3.7	Basic electrical design parameters, including transmission design voltage or voltages, line capacity, conductor type and configuration, spacing between phases, minimum conductor	NA	NA			NA				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
	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 kilovolts per meter (kV/m), and the design bases for these values.									
3.7	Predicted noise levels resulting from transmission-system operation.	NA	NA			NA				
3.7	Basic structural design parameters, including illustrations and descriptions of towers, conductors, and other structures, with dimensions, materials, color, and finish.	Yes	Yes			Yes				
3.7	The applicant should provide siting data for all potential corridors identified by the applicant utilizing topographic maps (7.5- or 15-minute scale as a rule) or aerial photographs showing the proposed corridor or corridors and all existing major high voltage corridors in the region.	NA	NA			NA				
3.7	Lengths, widths, and area of corridors, including modification and/or use of existing corridors and other facilities for the proposed project.	NA	NA			NA				
3.7	General methods of construction (e.g., tower foundations, stringing, location of access roads, span length, and clearing of corridors).	NA	NA			NA				
3.7	When available, tower and substation locations.	NA	NA			NA				
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., 3,800 MW(t))?	Yes	Yes			Yes	NA		Yes	NA
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)?	Yes	Yes			Yes	NA		Yes	NA
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 mega-watt per	Yes	Yes			Yes	NA		Yes	NA

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
	metric ton and no irradiated fuel assembly is shipped until at least 90 days after it is discharged from the reactor)?									
3.8	Does the applicant state that, with the exception of irradiated fuel, all radioactive waste shipped from the reactor is packaged and in solid form (10 CFR 51.52(a)(4))?	Yes	Yes			Yes	NA		Yes	NA
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))?	Yes	Yes			Yes	NA		Yes	NA
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 51.51(a)(6))?	Yes	Yes			Yes	NA		Yes	NA
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., 225,000 Btu/hr (~66 kW)?	No	No	Yes	SNF Shipment heat load is not evaluated in Sections 5.11 or 7.4 of the ER	Yes	NA		Yes	NA
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. per truck, 100 tons per cask per rail car)?	Yes	Yes			Yes	NA		Yes	NA
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 per day or three rail shipments per month)?	Yes	Yes			Yes	NA		Yes	NA
3.8	Does the applicant estimate the radiation dose to transport workers and compare the result to the Table S-4 condition (i.e., individual radiation doses in the range from 0.01 to 300 millirem per reactor year, population doses are 4 person-rem	Yes	Yes			Yes	NA		Yes	NA

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
	per reactor year)?									
3.8	Does the applicant calculate routine radiation doses to the general public - onlookers and compare the results to the Table S-4 conditions (i.e., routine radiation doses to onlookers – individual radiation doses in the range 0.003 to 1.3 millirem per reactor-year and population doses 3 person-rem per reactor year)?	Yes	Yes			Yes	NA		Yes	NA
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 (i.e., individual radiation doses in the range 0.0001 to 0.06 millirem per reactor year and population doses 3 person-rem per reactor year (includes doses to onlookers).	Yes	Yes			Yes	NA		Yes	NA
3.8	Does the applicant demonstrate that the radiological effects of accidents are SMALL as stated in Table S-4?	Yes	Yes			Yes	NA		Yes	NA
3.8	Does the applicant estimate the non-radiological impacts of accidents and compare the results to Table S-4 condition (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)?	No	No	Yes	No assessment of non-radiological accidents impacts is presented in Sections 5.11 or 7.4 of the ER	Yes	NA		Yes	NA
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?	Yes	Yes			Yes				
4.1.1	Will the applicant be making use of currently abandoned rail lines?	Yes	Yes			Yes				
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?	Yes	Yes			Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
4.1.1	Will borrow pits be constructed (or expanded)? If so what volumes of borrow will be transported and used in construction?	Yes to question 1. NA to question 2.	Yes to question 1. NA to question 2.			Yes				
4.1.1	Has the applicant detailed the extent of the planned construction footprint in terms of amount of disturbed ground?	Yes	Yes			Yes				
4.1.1	Will local roads or highways need reconditioning to handle the expected loads?	NA	NA			NA				
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?	Yes	Yes			Yes				
4.1.1	Is the applicant seeking a Limited Work Authorization (LWA) as part of an ESP application? If so, the LWA authorizes a significant amount of 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.	Yes	Yes			Yes				
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?	NA	NA			NA				
4.1.1	Will the applicant be making use of currently abandoned rail lines?	NA	NA			NA				
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?	NA	NA			NA				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
4.1.1	Will borrow pits be constructed (or expanded)? If so what volumes of borrow will be transported and used in construction?	NA	NA			NA				
4.1.1	Has the applicant detailed the extent of the planned construction footprint in terms of amount of disturbed ground?	No	No	Yes	We need to know where the heavily disturbed areas are vs. the cleared, slightly disturbed areas so that we can evaluate the survey results when they are provided.	Yes				
4.1.1	Will local roads or highways need reconditioning to handle the expected loads?	NA	NA			NA				
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?	NA	NA			NA				
4.1.1	Is the applicant seeking a Limited Work Authorization (LWA) as part of an ESP application? If so, the LWA authorizes a significant amount of 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.	Yes	No	No	Since they will apparently be doing the LWA under the incorrect assumption that the plant has been surveyed and there are no resources of concern, resources are at risk prior to the start of the RAI process.	No			Yes	4.1.1, 2.5.3, 4.1.3, 5.1.3
4.1.2	Highways, railroads, and utility corridors that will be crossed by transmission lines and access corridors	NA	NA			NA				
4.1.2	Description of construction techniques and the associated impact on land use.	NA	NA			NA				
4.1.2	Area and location of land within the corridors and offsite areas that will be disturbed by construction on either a long-term or short-term basis	NA	NA			NA				
4.1.2	Planned control actions during construction that will restrict land use in the corridors and offsite areas.	NA	NA			NA				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
4.1.2	Do proposed corridors cross land zoned for residential or recreational uses?	NA	NA			NA				
4.1.2	Has the applicant addressed the visual impact of constructing new corridors or widening existing corridors?	NA	NA			NA				
4.1.2	Highways, railroads, and utility corridors that will be crossed by transmission lines and access corridors	NA	NA			NA				
4.1.2	Description of construction techniques and the associated impact on land use.	NA	NA			NA				
4.1.2	Area and location of land within the corridors and offsite areas that will be disturbed by construction on either a long-term or short-term basis.	NA	NA			NA				
4.1.2	Planned control actions during construction that will restrict land use in the corridors and offsite areas.	NA	NA			NA				
4.1.2	Do proposed corridors cross land zoned for residential or recreational uses?	NA	NA			NA				
4.1.2	Has the applicant addressed the visual impact of constructing new corridors or widening existing corridors?	NA	NA			NA				
4.1.3	A description and National Register evaluation of cultural resources within the site boundary.	No	No	No	The site has not been surveyed adequately and artifactual material found during the pre-ap at STP 3 & 4 was not described or evaluated. If other new sites are found they will need to be evaluated (2.5.3. 4.1.3)	No			No	5.1.3
4.1.3	A description and National Register evaluation of cultural resources within 15 km (9 mi) of the proposed site or 2 km (1.2 mi) of proposed transmission corridors, access corridors, and offsite areas.	Yes	Yes			Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
4.1.3	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 tribal agencies).	Yes	No	Yes	The letter to and from SHPO was not included (4.1.3)	Yes				
4.1.3	State laws and plans for historic preservation.	No	No	Yes	State laws and plans for historic preservation will need to be added (24.1.3) [This information is not usually included in our products]	Yes			Yes	
4.1.3	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 in the event of an inadvertent discovery.	No	No	Yes	There is no discussion of how human remains will be handled (4.1.3).	Yes			Yes	
4.1.3	The applicant's finding on whether important cultural and historical resources will be affected. During construction.	Yes	No	No	The applicant made a finding but the finding is suspect because the site has not been surveyed adequately and artifactual material found during the pre-ap at STP 3 & 4 was not described or evaluated. If other new sites are found they will need to be evaluated before the applicant can makes its finding (4.1.3)	No			No	5.1.3
4.1.3	The applicant's finding on whether important cultural and historical resources will be adversely affected.	Yes	No	No	The applicant's findings were based on incomplete data. An evaluation of the material found at STP 3 & 4 during the pre-ap trip and of any new sites found when the plant	No			No	5.1.3

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
					is surveyed will need to be done before defensible findings can be made (4.1.3)					
4.1.3	The applicant's proposed avoidance measures to avoid impact to important cultural and historical resources during construction.	Yes	No	Yes	No procedure is identified (4.1.3)	Yes				
4.2.1	The following list of data should be obtained: o descriptions of the physical characteristics of the surface-water bodies and groundwater aquifers o 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 and bridges; 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	Yes	Yes	NA	NA	Yes	NA		NA	NA
4.2.1	The following list of data should be provided: o identification of water sources used during construction and the average and maximum use rates of these waters o 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 o identification of hydrologic alterations expected to result from the project related construction activities listed previously	Yes	No	Yes	Water body receiving construction effluents not identified, partial description of best management practices, and partial description of applicable hydrological standards and regulations.	Yes	NA		NA	NA

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
	o identification and location of groundwater and surface-water users and areas that could be affected by project related hydrologic alterations o descriptions of proposed practices and measures to limit or minimize expected hydrologic alterations o Federal, State, regional, local, and affected Native American tribal agencies' best management practices and regulations o descriptions of proposed means to ensure construction activity compliance with applicable hydrological standards and regulations.									
4.2.2	The following data should be provided: o identification and locations of groundwater and surface-water users and areas that could be impacted by project related construction activities affecting water use o predicted impacts on the water users identified in the previous item o 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 o consultations with Federal, State, regional, local, and affected Native American tribal regulators o descriptions of proposed means to ensure construction activity compliance with water-quality and water-use standards and regulations o water-quality requirements for key elements of aquatic ecosystem and domestic users	Yes	No	Yes	Partial description of consultations with Federal, State, regional, local, and Native American tribal regulators	Yes	NA		NA	NA

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
4.2.2	The following list of data should be provided: o descriptions of the site and vicinity water bodies and aquifers (including sole-source aquifers) o descriptions of hydrologic alterations and their related construction activities o the physical effects of hydrologic alterations o comparisons of water quantity available to other water users with existing and known future water rights and allocations o identification of water bodies 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 o baseline water-quality data for surface-water and groundwater sources used during construction and impacted by construction activities o potential changes to surface-water and ground-water quality (e.g., heavy metal contamination) resulting from substrate exposure during construction	Yes	No	Yes	No discussion of baseline water quality data for surface and groundwater sources used during construction in ER Section 4.2.2.	Yes	NA		NA	NA
4.3.1	Has the applicant determined the areal extent and location of potential impacts, including the total area of land to be disturbed? Did the applicant provide a site map showing proposed buildings, the land to be cleared, borrow areas, waste disposal areas, the construction zone, and the site boundary and the vegetation communities/ habitats that will be impacted?	Yes	Yes			Yes				
4.3.1	Does the applicant have a proposed schedule of construction activities and does the applicant plan to complete any of these construction activities under a limited work permit or as part of pre-construction? If so, which ones?	Yes	Yes			Yes				
4.3.1	Does the applicant have a site redress plan?	Yes	Yes			Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
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 specific to the site and to the transmission line corridors? Are best management practices being considered in the planning to mitigate construction activities?	Yes	Yes			Yes				
4.3.1	Did the applicant provide an estimate of the potential for bird collisions with cooling towers, other elevated construction equipment or facility structures or with transmission towers or lines?	Yes	No	Yes	ER 5.3 .3 and 5.6 discuss avian collision and cite 2nd party transmission line management information regarding potential collisions. NRC may need supporting information for estimating potential for avian collisions with transmission corridors given the importance of the site vicinity as a important bird area and the potential for T&E species to use flyways	Yes				
4.3.1	Did the applicant identify the construction activities that impact "important" species and habitats of the site and vicinity, transmission corridors, and offsite areas (e.g., construction activities that will dewater any wetlands, ponds, or seepages or alter surface drainage patterns supporting terrestrial biota/wetlands)?	Yes	No	Yes	ER 4.3.1 and 4.2: Lacks adequate information to assess potential construction impacts of heavy haul road; to describe potential effects of dewatering and alteration of surface drainage patterns on wetlands/terrestrial biota	Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
4.3.1	Has the applicant identified the area to be used on a short term basis during construction, and plans for restoration of this land?	Yes	Yes			Yes				
4.3.1	Has the applicant identified any noise impacts on "important" species?	Yes	Yes			Yes				
4.3.2	Has the applicant identified the construction activities that could impact "important" aquatic species and habitats of the site and vicinity, transmission corridors, and offsite areas? Is there a map available that shows the areal extent and location of the construction activities?	Yes	Yes §4.3.2, map Fig. 3.9S-1			Yes				
4.3.2	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)? 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: o placement of intake and discharge structures o channel modifications for navigation or flow control o placement and removal of cofferdams o construction of bulkheads, piers, jetties, basins, and storm sewers o direct dredging, including the area that may be affected by resulting siltation and turbidity o percent of the water body cross section that might be obstructed by construction activity at any time o time and duration of such obstruction o potential changes to water quality caused by exposure of substrate to contaminants during construction (e.g., dredging for intake channels, cofferdam construction).	Yes	o Yes §4.3.2.1 o Yes §4.3.2.2 o Yes §4.3.2.1 o NA o Yes §4.3.2.2 o Yes §4.3.2.1 o Yes §4.3.2.1			Yes				
4.3.2	Is there information available that can be used to assess the potential for reversibility of impacts following completion of construction? Are there plans for environmental improvement following construction?		Yes §4.3.2			Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
4.3.2	Are there plans for limiting impacts during construction (e.g., the maintenance of siltation ponds or catchment basins)? Are recognized best management practices cited as means for limiting impacts?		Yes §4.3.2			Yes				
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? Have any 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.		Yes §4.3.2			Yes				
4.3.2	If dredging is involved, are there plans for disposal of dredged material and placement of fill material?		Yes §4.3.2.2, 3.9S.3.9			Yes				
4.3.2	Are there plans for dewatering wetlands?		Yes §4.3.2.1			Yes				
4.3.2	If a cooling pond 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?		Yes §4.3.2.1			Yes				
4.3.2	If the applicant wishes to accelerate the start of construction, than evaluate that the applicant has included in the ER an initial evaluation of environmental impacts based on an analysis of at least six 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.		Yes §4.3.2			Yes				
4.4.1	Distribution of people, buildings, roads, and recreational facilities vulnerable to impact from construction-related activities.	Yes	Yes		Discussed	Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
4.4.1	Applicable standards for levels of noise, dust, and gaseous pollutants.	Yes	No	Yes	Seems to be partially reported	Yes				
4.4.1	Predicted noise levels at sensitive areas identified in the first item listed above.	Yes	Yes		Part of discussion is in Section 3.9	Yes				
4.4.1	Predicted air pollutant levels at sensitive areas identified in the first item listed above.	Yes	Yes			Yes				
4.4.2	Annual expenditures within the region for materials and services during construction.	Yes	Yes			Yes				
4.4.2	Plans to supplement public facilities and services to support construction and agencies responsible for facility expansion.	Yes	Yes			Yes				
4.4.2	Taxes by type and jurisdiction to be paid during construction.	Yes	Yes			Yes				
4.4.2	Annual construction labor force requirements (for each quarter year, if possible) over the construction period. Where necessary, requirements by major construction craft may be reported.	Yes	Yes			Yes				
4.4.3	Pathways where any environmental (including socioeconomic) impact during construction may interact with cultural or economic facts that may result in disproportionate environmental impacts on minority and low-income populations.	Yes	No	Yes	None in natural system found that were adverse, but only a summary of agency comments was reported. Not clear how thorough the search was of other sources in minority community and literature. Impacts on housing costs were noted	Yes				
4.4.3	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 (including socioeconomic) impacts during construction as compared with the entire geographic area. In addition, information should be obtained on any assessment comparing the impacts with the larger overall geographic area encompassing all of the alternative sites.	Yes	No	Yes, if necessary	Depends on findings in previous item (4.4.2)	Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
4.4.3	Any assessment (qualitative or quantitative, as appropriate) of the significance or potential significance of such environmental impacts on each minority and low-income population.	Yes	No	Yes, if neces-sary	Depends on findings of 4.4.2	Yes				
4.4.3	Any assessment of the degree to which each minority and low-income population would disproportionately receive any benefits compared with the entire geographic area.	Yes	No	Yes	None found, so none disproportionate. But see 4.4.2.	Yes				
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.	Yes	Yes	Yes		Yes				
4.5	The location and characteristics of external radiation sources and radioactive effluent emission sources at nearby facilities.	Yes	Yes	Yes		Yes				
4.5	Measured or estimated radiation dose rates and airborne radioactivity concentrations at the construction site.	Yes	Yes	Yes		Yes				
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.	Yes	Yes	Yes		Yes				
4.5	The estimated annual collective dose to the construction work force, including models assumptions, and input data used for the dose estimates.	Yes	Yes	Yes		Yes				
4.6	Data and information related to the applicant's commitments to measures and controls to limit potential impacts should consist of the following three elements: (1) identification of the impact, (2) the planned control program, including monitoring, and (3) the control procedures - for the following areas: - noise - erosion - dust - traffic - effluents and wastes - surface-water impacts - groundwater impacts	Yes	Yes	NA	NA	NA	NA		NA	NA

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
	- land-use protection/restoration - water-use protection/restoration - terrestrial ecosystem impacts - aquatic ecosystem impacts - socioeconomic impacts - radiation exposure to construction workers - other site-specific impacts.									
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.	Yes	Yes			Yes				
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.	Yes	Yes			Yes				
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 LR GEIS provides clear metrics for determining impact significance in this area, and it should be referenced in this context by the applicant preparing the ER.	Yes	Yes			Yes				
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.	NA	NA			NA				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
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.	NA	NA			NA				
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 LR GEIS provides clear metrics for determining impact significance in this area, and it should be referenced in this context by the applicant preparing the ER.	NA	NA			NA				
5.1.2	The applicant should provide a detailed characterization of typical transmission corridor maintenance activities.	NA	NA			NA				
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?	NA	NA			NA				
5.1.2	The applicant should provide a detailed characterization of typical transmission corridor maintenance activities.	NA	NA			NA				
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?	NA	NA			NA				
5.1.3	A description and National Register evaluation of cultural resources within the site boundary.	No	No	No	A evaluation of the place where artifacts were found during the pre-ap trip needs to be done, and other sites may need to be evaluated when an archaeological survey is done (2.5.3, 5.1.3)	No			Yes	

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
5.1.3	A description and National Register evaluation of cultural resources within 15 km (9 mi) of the proposed site or 2 km (1.2 mi) of proposed transmission corridors, access corridors, and offsite areas.	Yes	Yes	Yes		Yes				
5.1.3	The SHPO's comments on the impact of the proposed project on important historic properties.	Yes	No	Yes	The letter to and from SHPO was not included (4.1.3, 5.1.3)	Yes				
5.1.3	State laws and plans for historic preservation.	No	No	Yes	State laws and plans for historic preservation will need to be added (5.1.3)	Yes			Yes	
5.1.3	The applicant's finding on whether important cultural and historical resources will be affected during operations.	Yes	No	No	The findings are based on incomplete data and thus will need to be redone to address the materials found at STP 3 & 4 and any new sites when a survey is done (5.1.3).	No			Yes	
5.2.1	The following list of data should be provided: o 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: (a) location, depth, and elevation of wells (total and cased) and water levels with respect to the plant, (b) identification of aquifers (c) average monthly withdrawal rates. o 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. o identification and description of the hydrological alterations resulting from the identified operational activities. These can include changes in the flood handling capability of the	Yes	No	Yes	Partial description of operational activities.	Yes	NA		NA	NA

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
	floodplain, flow and circulation patterns, erosion subsidence, water availability, and sediment transport									
5.2.1	The following list of data should be provided: o descriptions of the physical characteristics of the surface-water bodies and groundwater aquifers o 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 o withdrawals and returns of surface water and groundwater used for plant operation, including rates and sources of water. 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. o 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 water bodies (c) average monthly withdrawal and consumption rate.	Yes	No	Yes	Partial description of known and future water users.	Yes	NA		NA	NA
5.2.1	The following list of data should be provided: o 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 o a summary of statutory and other legal restrictions relating to plant water use and water consumption	Yes	No	Yes	Partial identification of surface and ground water users, missing description of proposed means to ensure compliance with standards and regulations.	Yes	NA		NA	NA

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
	o 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.									
5.2.2	The following list of data should be provided: o descriptions of the site and vicinity water bodies and groundwater aquifers o descriptions of hydrologic alterations and their related operational activities o the physical effects of hydrologic alterations o a quantitative description of present and known future surface-water uses, including any station water 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 water body, (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 water body, (c) average monthly withdrawal and consumption rate for each division by use category (e.g., domestic, municipal, agriculture).	Yes	No	Yes	Partial quantitative description of present and known future surface-water uses.	Yes	NA		NA	NA
5.2.2	The following list of data should be provided: o 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 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. o comparisons of water quantity available to other water users with existing and known future water rights and allocations	Yes	No	Yes	Partial comparison of water available to other water users, partial description of flow rates and composition of effluents, missing baseline water quality data.	Yes	NA		NA	NA

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
	o a quantitative and qualitative description of recreational, navigational, and other nonconsumptive known future water uses. For a 10-km (6-mi) radius, this should include the following: (a) identification of water bodies and location with respect to the plant, (b) kind and location of activity on the water body, (c) use rate with time variation o identification of water bodies receiving plant effluents and the expected average and maximum flow rates and composition of these effluents o predicted impacts to water users or water-use categories described in the "Data and Information" section of this ESRP o baseline water-quality data for surface-water and groundwater sources used for and impacted by plant operation (from ESRP 2.3.3)									
5.2.2	The following list of data should be provided: o baseline water-quality data for surface-water and groundwater sources used for and impacted by plant operation o descriptions of any proposed practices and measures to control or limit operational water-use impacts o summary of statutory and other legal restrictions relating to water use or specific water-body restrictions on water use imposed by Federal, State, regional, local, or affected Native American tribal regulations o 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) o descriptions of proposed means to ensure operational compliance with water-quality and water-use standards and regulations	Yes	No	Yes	Missing baseline water quality data.	Yes	NA		NA	NA

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
5.3.1.1	The following list of data should be provided: o bathymetry and sediment characteristics in the vicinity of the intake structure(s) o maps depicting station layout with respect to the water body, including locations of all intakes and discharges o intake flow rates and velocities as a function of plant operating conditions o detailed drawings of the intake structure(s), including the relationship of the structure to the water surface (normal and minimum levels) o ambient current patterns in the vicinity of the proposed intake structure(s) o descriptions of other intake system design and performance characteristics affecting hydrodynamics (e.g., horizontal and vertical approach velocities, geometry of intake canals, submerged riprap) o descriptions of spatial and temporal alterations of the ambient flow field and of any other physical hydrologic effects induced by intake-system operation	Yes	No	Yes	Missing bathymetry near intake structure and ambient current patterns in the vicinity. Missing description of spatial and temporal alterations to ambient flow field during intake operation.	Yes	NA		NA	NA
5.3.1.2	Has the applicant identified adverse impacts of cooling system intake operation to aquatic ecosystems?	Yes	Yes §5.3.1.2			Yes				
5.3.1.2	Have measures or controls to limit adverse impacts been identified?	Yes	Yes §5.3.1.2			Yes				
5.3.1.2	Has the applicant provided a current NPDES permit with a 316(b) determination, if appropriate, or equivalent State permits and supporting documentation?	Yes	Yes 1.2, §5.3.1.2. 1			Yes				
5.3.1.2	Has the applicant identified the "important" aquatic organisms and their life stages susceptible to entrapment, impingement, or entrainment?	Yes	Yes §5.3.1.2. 1			Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
5.3.1.2	Is there information available to estimate the levels of susceptibility for fish or shellfish species to be entrapped or impinged by the cooling system, in either qualitative or quantitative terms? Is there information about the design and proposed operation of any proposed systems (e.g., screen wash or fish return system) and how the potential for entrapment and impingement with that system?	No	No	No	§5.3.1.2.2 is based on assumptions about salinity and related abundance of species using information prior to 1991. Need information on Colorado River at RMPF since 1991 when the river flow conditions were changed in order to validate assumptions. Description of current monitoring activities are not detailed enough to assess if information is being collected.	Unknown				
5.3.1.2	Is there information on the cooling system concerning the potential for altered hydrodynamic characteristics induced by inlet system operation (e.g., altered circulation patterns) to affect attraction and entrapment of aquatic biota? What is the extent and seasonal variation of any such alterations? Are there plans for recirculation of heated effluent from the facility discharge system, which has the potential for increased impacts of entrapment, entrainment, and impingement?		Yes §5.3.1.2.1			Yes				
5.3.1.2	Has the applicant estimated the magnitude of the potential impingement and entrainment impacts on the species populations and the aquatic ecosystem?	No	No	No	§5.3.1.2.1 includes assumptions and conclusions based on information prior to Colorado River diversion. Without current monitoring at the intake on the river, the conclusions are not relevant to current conditions.	Unknown				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
5.3.2.1	The following list of data should be obtained on the RECEIVING SURFACE water bodies: o bathymetry of the water bodies that may be affected by operation of the plant discharge system, with detailed data in the vicinity of the discharge o maps depicting station layout with respect to water bodies, including the locations of all intakes and discharges o maximum, average maximum, average, average minimum, and minimum monthly temperatures in the water bodies o erosion characteristics and sediment transport (including rate, bed and suspended load fractions, and gradation analyses) o 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	Yes	No	Yes	Partial description of erosion and sediment transport characteristics.	Yes	NA		NA	NA
5.3.2.1	The following list of data should be obtained on the RECEIVING SURFACE water bodies: o 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 o for estuaries and oceans: seasonal variations in the shoreline and bottom geometry due to sediment transport; tidal current patterns	Yes	No	Yes	Partial description of seasonal variations in shoreline and bottom geometry.	Yes	NA		NA	NA

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
	(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. For estuaries, maximum, average maximum, average, average minimum, and minimum monthly river discharge and flushing characteristics									
5.3.2.1	The following list of data should be obtained on the METEOROLOGY: o onsite meteorological data o National Oceanographic and Atmospheric Administration (NOAA) National Climatic Data Center meteorological data for the nearest National Weather Service (NWS) station o the elevation of instruments measuring wind speeds, wet bulb temperatures, and humidities	Yes	No	Yes	Missing description of onsite meteorological data in ER Section 5.3.2.1.	Yes				
5.3.2.1	The following list of data should be obtained on the DISCHARGE STRUCTURE: o detailed drawings of the discharge structure(s), including relationship of structure(s) to the water surface (normal and minimum) and water body bathymetry o water flow rates, velocities, and temperatures in the discharge stream(s) as a function of operating conditions	Yes	No	Yes	No detailed drawings of disch structure in ER Section 5.3.2.1. No flow rates, velocities, and temperatures of discharge streams in ER Section 5.3.2.1.	Yes	NA		NA	NA
5.3.2.1	The following list of information on the applicant's models, if used: o for numerical models: (a) theory, assumptions, and basis for applicability (b) procedures used to estimate model parameters (e.g., diffusion coefficients) (c) model verification (d) the applicant's predicted temperature distributions, areas for isotherms, dilution rates, and time of passage through plume. o 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	Yes	No	Yes	No numerical or physical models of discharge plume described in ER Section 5.3.2.1.	Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
	locations of temperature probes, infrared mapping), (d) prototype verification (if any), (e) the applicant's flow fields and temperature distributions for critical and average hydrological conditions									
5.3.2.2	Has the applicant identified adverse impacts of cooling system discharge operation on aquatic biota? Have thermal, chemical, and physical alterations to the receiving water body been identified that may affect impacts? Will there be alterations in the discharge area (the mixing zone) or changes that will extend over a larger portion of the receiving-water body that might effect biota that are transported through, migrate through, or are attracted to the mixing zone?		No	Yes	§5.3.2.2.1 provides information on the permit conditions, but there is no information about the temperature in the reservoir that could be discharged. Discussions with the applicant will provide sufficient information.	Yes				
5.3.2.2	Have measures or controls to limit adverse impacts been identified?		Yes §5.3.2.2			Yes				
5.3.2.2	Has the applicant provided a current NPDES permit with a 316(a) determination (if required) or equivalent State permits and supporting documentation?		Yes §5.3.2.2			Yes				
5.3.2.2	Are there "important" aquatic species present? Are the types, life stages, and relative abundance of impacted "important" biota described? Is there a description of the specific aspects of the proposed discharge-system operation responsible for the impacts on the biota?		Yes §5.3.2.2			Yes				
5.3.2.2	Are the aquatic species susceptible to heat shock resulting from facility cooling-system discharges to the receiving water bodies? Is there information to determine if the effects will be detectable or may destabilize or noticeably alter population levels?		Yes §5.3.2.2.1			Yes				
5.3.2.2	Has the applicant considered the biological effects of thermal, chemical, and physical alterations to the receiving water body on the identified "important" aquatic species? Are there estimates of survival from these discharge system impacts, and estimates of the relative or absolute losses of the impacted populations?		Yes §5.3.2.2			Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
5.3.3.1	Evaluation of the potential impacts caused by the heat dissipation system, such as weather modification due to cloud development and increased precipitation, shadowing and drift caused by the condensed plume, increased local humidity, and increased fogging and icing.	Yes	No	Yes	ER Section 5.3.3.1.1. There are unresolved questions related to the plume modeling. ER Section 5.3.3.1.2. The jump to conclusion with respect to fogging impacts isn't adequately supported. ER Section 5.3.3.1.5. This section needs to consider sources of pollution beyond 2 km. Statements in ER Section 3.4.1.1.1 (p 3.4-1 and 3.4-1) related to raising the MCR level are sufficient to indicate that reevaluation of fogging potential.	Yes				
5.3.3.2	Has the applicant identified the concentration and chemical composition of dissolved and suspended solids in cooling tower basins or spray canals on a seasonal basis?	Yes	No	Yes	ER 3.4 and 5.3, 2.1 Concentrations of dissolved and suspended solids in groundwater (primary source of make up water for the cooling towers) are provided in Table 2.1.3:20. Maximum concentrations are used for modeling drift, but no info is provided on potential seasonal differences in dissolved and	Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
					suspended solids in cooling tower basins.					
5.3.3.2	Has the applicant considered the impacts of drift deposition on biota and communities? Has the applicant identified isopleths of deposition at ground levels on a seasonal basis? Have they described natural and managed communities on the site and offsite that occur in isopleths above 20 kg/ha/yr?	Yes	Yes			Yes				
5.3.3.2	Has the applicant described "important" terrestrial species and habitats that may be affected by the heat dissipation system?	Yes	Yes			Yes				
5.3.3.2	Has the applicant considered the detrimental effects increased fogging/icing could have on local vegetation?	Yes	Yes			Yes				
5.3.3.2	Has the applicant considered the impact to terrestrial biota when new shoreline habitats are created along ponds and reservoirs built for cooling purposes?	Yes	Yes			Yes				
5.3.3.2	Has the applicant considered impacts to existing shoreline if flows are changed due to increased withdrawals?	Yes	No	Yes	ER 5.3.3.2 does not address potential effects to nesting bird colonies of fluctuating water levels	Yes				
5.3.3.2	Has the applicant identified adverse impacts of cooling system heat dissipation to terrestrial ecosystems and any measures or controls to limit adverse impacts?	Yes	Yes			Yes				
5.4.1	Distances from the proposed reactor to the following points or areas for each of the 22½-degree radial sectors centered on the 16 cardinal compass directions: - Nearest site boundary - 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 - If the applicant proposes elevated releases of radioactive effluents as defined in Regulatory Guide 1.111, the location of all milk cows, milk goats, meat	Yes	Yes			Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
	animals, residences, and vegetable gardens larger than 50 m^2 out to a distance of 5 km (3 mi).									
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.	Yes	Yes		Table 5.4-3 footnotes cattle on pasture for 11 mo/y	Yes				
5.4.1	Fraction of the year that leafy vegetables are grown and the average absolute humidity in grams per cubic meter during the growing season.	Yes	Yes			Yes				
5.4.1	The nearest present and known future locations from which an individual can obtain aquatic food and/or drinking water.	Yes	Yes			Yes				
5.4.1	The nearest present and known future shoreline areas that an individual can use for recreational purposes.	Yes	Yes			Yes				
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.	Yes	Yes		Table 5.4-1 footnotes transit time of 1 h to receptors and a dilution factor of 1.	Yes				
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 cubic meters per second.	Yes	Yes		Flow rates given in cubic ft/s	Yes				
5.4.1	The following distributional data for each of the 22½-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: - Projected population for five years from the time of the licensing action under consideration - Present annual meat production (kg/yr) - Present annual milk production (liter/yr) - Present annual vegetable production (kg/yr) - Estimate of direct radiation doses from sources within the site.	Yes	Yes		Radial distances provided are not the same as those requested	Yes				
5.4.1	The present commercial fish and invertebrate catch (in kg/yr) from waters within 80 km (50 mi)	No	No	Yes	Socio-econ. Section states that commercial	Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
	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.				fishing is a primary contributor to Matagorda County, but it is not addressed in Section 5.4.1. It needs to be addressed.					
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.	No	No	Yes	Drinking water path-way is not considered per Table 5.4-1. Atmospheric deposition to DW needs to be looked at.	Yes				
5.4.1	The irrigation rate (liter/m^2/month), 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.	No	Yes	Yes	Irrigation was not considered. Offsite Dose Calculation Manual stated CO river water is not used for irrigation, but could be.	Yes				
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.	No	Yes	Yes	No unusual plants or animals mentioned; no food processing operations mentioned	Yes				
5.4.2	Information related to exposure pathways,	Yes	Yes			Yes				

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	including - receptor locations - population distribution - meteorological dispersion data - hydrological dilution data.									
5.4.2	Gaseous and liquid effluent data.	Yes	Yes			Yes				
5.4.2	Exposure rates associated with onsite out-of-plant storage of solid waste.	No	No	Yes	No mention of onsite out-of-plant storage of solid waste is made in Section 5.4.2	Yes				
5.4.2	Applicant calculated dose data.	Yes	Yes			Yes				
5.4.2	Occupational radiation dose estimates.	Yes	Yes			Yes				
5.4.3	Data on water use to support the analysis of public dose from waterborne sources.	No	No	Yes	No data on water use was provided in Section 5.4.3	Yes				
5.4.3	Estimated individual and collective doses.	Yes	Yes			Yes				
5.4.3	Maximum site-specific doses to members of the public.	Yes	Yes			Yes				
5.4.3	Dose consequences and health effects associated with normal operational effluents.	Yes	Yes			Yes				
5.4.3	Summary of the maximum individual and collective dose estimates.	Yes	Yes			Yes				
5.4.3	Radiation dose data including - Maximum individual doses from liquid effluents - Maximum individual doses from gaseous effluents - Maximum individual doses from direct radiation sources - Collective doses to the population within 80 km (50 mi) of the facility - Occupational collective doses.	No	Yes	Yes	Need maximum dose from direct rad sources.	Yes				
5.4.3	Natural radiation doses that are generally applicable to the site.	No	No	Yes	Need natural rad doses applicable to site	Yes				
5.4.4	A list of the biota to be considered in this evaluation.	Yes	No	Yes	Not positive the list was all inclusive of biota present	Yes				
5.4.4	Site-specific pathways for radiation exposure to biota.	Yes	No	Yes	Description of pathway analysis used for biota is unclear. Clarification is necessary.	Yes				
5.4.4	Doses to the maximally exposed individual.	Yes	Yes			Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
5.5.1	Descriptions of nonradioactive waste systems, including quantities, composition, and frequency of waste discharges to water, land, and air.	Yes	No	Yes	Need non-rad waste quantities, composition and frequency of discharge	Yes				
5.5.1	For discharges to water, waste concentrations at the point of discharge, predicted dilution in the receiving water body, and estimates of concentrations at various distances from the discharge point.	Yes	No	Yes	Need waste concentrations at point of discharge + concentration estimates at distances	Yes				
5.5.1	Ambient concentrations in the receiving water body of the chemicals and other materials contained in the waste discharges.	Yes	Yes			Yes				
5.5.1	Receiving water body water-quality criteria for domestic, industrial, agricultural, and recreational uses.	Yes	Yes			Yes				
5.5.1	Water use for the receiving water bodies.	Yes	Yes			Yes				
5.5.1	Aquatic ecology for the receiving water bodies.	Yes	Yes			Yes				
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).	Yes	No	Yes	Need size, location of disposal sites; quantity, composition of wastes, etc.	Yes				
5.5.1	Terrestrial ecology at disposal sites other than licensed commercial sites.	No	No	Yes	Need alternate disposal site	Yes				
5.5.1	Soil data for disposal site (other than licensed commercial sites), and potential for transport of wastes to ground and surface waters.	No	No	Yes	No soil data for offsite disposal site, etc.	Yes				
5.5.1	Plans for ultimate treatment and/or restoration of retired disposal sites (other than licensed commercial sites).	Yes	Yes			Yes				
5.5.1	Applicable Federal, State, regional, local, and affected Native American tribal criteria or standards for air quality and for solid-waste disposal to land areas.	Yes	Yes			Yes				
5.5.1	Other site-specific waste-disposal activities (e.g., spoils from intermittent dredging activities).	Yes	Yes			Yes				
5.5.1	Applicant's NPDES permit and water quality certification or their status if not issued.	Yes	Yes			Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
5.5.2	Descriptions of systems that create mixed wastes, including quantities of waste produced.	Yes	Yes			Yes				
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).	Yes	Yes			Yes				
5.5.2	Estimated environmental impacts, including health effects resulting from exposure to the chemical constituents and those resulting from radiological exposures that are estimated to be received by workers as a result of mixed-waste testing and storage.	Yes	Yes			Yes				
5.5.2	A waste minimization plan that identifies process changes that can be made to reduce or eliminate mixed wastes.	Yes	Yes			Yes				
5.6.1	Has the applicant described the maintenance practices, such as use of chemical herbicides, roadway maintenance, and mechanical clearing, that are anticipated to affect terrestrial biota, including sensitive agricultural crops?	Yes	Yes			Yes				
5.6.1	Does the applicant use any special maintenance practices used in important habitats (e.g., marshes, natural areas, and bogs), including those that result in unique beneficial effects on specific terrestrial biota?	Yes	Yes			Yes				
5.6.1	Does the applicant partake in any wildlife-management practices?	Yes	Yes			Yes				
5.6.1	Has the applicant identified any potential adverse impacts resulting from operation and maintenance activities include soil erosion, runoff or uncontrolled release of defoliants and herbicides, barriers to wildlife movements created by clear-cutting of trees, and subtle effects of high energy electrical fields on the behavior of animals?	Yes	Yes			Yes				
5.6.1	Has the applicant identified the operational and maintenance activities associated with transmission facilities that could impact "important" terrestrial species and habitats?	Yes	Yes			Yes				
5.6.1	Has the applicant identified a list of the impacts for which there are measures or controls to limit adverse impacts and the associated measures and	Yes	Yes			Yes				

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	controls? Has the applicant made a commitment to limit these impacts?									
5.6.2	Has the applicant identified operational and maintenance activities associated with transmission facilities that could adversely affect "important" aquatic species and habitats? The resources to be considered include marshlands, wetlands, impoundments, and water bodies.		Yes §5.6.2			Yes				
5.6.2	Have potential impacts on these resources been identified? These could include heating of water bodies from removal of shade trees, siltation and turbidity resulting from increased runoff and erosion, runoff of defoliants and herbicides, recreational access by the public, and high energy electrical fields associated with underwater transmission facilities.		Yes §5.6.2			Yes				
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?		No	Yes	§5.6.2.2 indicates that transmission system "entities" have maintenance and management practices to limit adverse impacts. Need examples or procedures to independently verify level of impact from practices.	Yes				
5.7	Comparison of estimated impacts from the proposed facility to those listed in ESRP 5.7, Appendix A containing the current amendments to Table S-3 of Paragraph (a) of 10 CFR 51.51, as given in 49 FR 9381 and 49 FR 10922.	Yes	Yes			Yes				
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 LWRs. Evaluation of the impacts from the proposed facility demonstrating they are bounded by the impacts listed in the ESRP.	Yes	Yes			Yes				
5.8.1	Distribution of people, buildings, roads, and recreational facilities that are vulnerable to impact	Yes	Yes			Yes				

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	by facility operation (from the ER).									
5.8.1	Predicted noise levels and nonradiological air pollutant levels at sensitive areas as identified above.	Yes	Yes			Yes				
5.8.1	Applicable standards for levels of noise and gaseous pollutants.	Yes	Yes			Yes				
5.8.1	Applicant's proposed methods to reduce visual impacts and impacts of noise and other pollutants.	Yes	No	Yes	Discussed, but not committed to.	Yes				
5.8.2	Expenditures within the region for materials and services during operation.	No		Yes	May be able to say very little	Yes				
5.8.2	Plans to adjust public facilities and services during the transition period from the construction to the operation phase and agencies responsible for accomplishing this adjustment.	Yes	Yes			Yes				
5.8.2	Taxes by type and jurisdiction to be paid annually during operation.	Yes	Yes			Yes				
5.8.2	Annual operation labor force.	Yes	Yes			Yes				
5.8.3	Pathways where any environmental (including socioeconomic) impact during operations may interact with cultural or economic facts that may result in disproportionate environmental impacts on minority and low-income populations.	Yes	No	Yes	Discussed. Main impact through housing, but same question here as in 4.4.2	Yes				
5.8.3	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 (including socioeconomic) impacts during operations as compared with the entire geographic area. In addition, information should be obtained on any assessment comparing the impacts with the larger overall geographic area encompassing all of the alternative sites.	Yes	No	Yes	See answer to 5.8.2	Yes				
5.8.3	Any assessment (qualitative or quantitative, as appropriate) of the significance or potential significance of such environmental impacts on each minority and low-income population.	Yes	No	Yes	Discussed collectively for minority and low income as a group. See answer to 5.8.2	Yes				
5.8.3	Any assessment of the degree to which each minority and low-income population would disproportionately receive any benefits compared	Yes	No	Yes	Discussed collectively for minority and low income as a group. See	Yes				

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	with the entire geographic area.				answer to 5.8.2					
5.9	A report as specified in 10 CFR 50.75(b)(I) and required by 10 CFR 50.33(k) containing a certification that financial assurance for radiological decommissioning will be provided.	Yes	Yes			Yes				
5.10	Listing of potentially adverse impacts: - noise - erosion - effluents and wastes - surface-water impacts - groundwater impacts - terrestrial ecosystem impacts - aquatic ecosystem impacts - socioeconomic impacts - other site-specific impacts.	Yes	Yes	NA	NA	NA	NA		NA	NA
5.10	Proposed design or planned control program in each of the above areas.	Yes	Yes	NA	NA	NA	NA		NA	NA
5.10	Proposed control or operational procedures in each of the above areas.	Yes	Yes	NA	NA	NA	NA		NA	NA
6.1	The following list of data describing the THERMAL MONITORING should be provided: o maps showing: (a) features of the plant and site, including the boundaries and bathymetry of all water bodies 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 o the type and frequency of temperature measurements taken at each location, as well as the duration of each monitoring program o descriptions of the monitoring equipment used o descriptions of the data analysis procedures used	Yes	No	Yes	Missing bathymetry, and description of data analysis procedures.	Yes	NA		NA	NA
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	Yes	Yes			Yes				

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	to the effluent release points.									
6.2	A description of the proposed monitoring program including: - number and location of sample collection points and measuring devices and the pathway sampled or measured - sample size, sample collection frequency, and sampling duration - type and frequency of analysis - general types of sample collection and measuring equipment - lower limit of detection for each analysis - the approximate date on which the proposed program will be effective - the quality-assurance program for radiological environmental monitoring programs.	No	No	Yes	Need sample sizes and LLD for each analysis.	Yes				
6.2	A discussion justifying the choice of sample sites, analyses, sampling frequencies, sampling and measuring durations, sample sizes, and lower limits of detection.	Yes	Yes			Yes				
6.3	The following list of data describing the HYDROLOGICAL MONITORING should be provided: o maps showing (a) features of the plant and site, including the boundaries and bathymetry of all surface-water bodies (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 o site vicinity surface and groundwater average and extreme velocities and flow rates o sediment transport (suspended and bed load) characteristics and erodability of the site soil o the type and frequency of data collected at each location as well as the duration of each monitoring program o descriptions of the monitoring equipment used o descriptions of the data analysis procedures	Yes	No	Yes	Missing bathymetry, sediment transport, and data analysis procedures used.	Yes	NA		NA	NA

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	used o documentation of data quality objectives (if any)									
6.5.1	Did the applicant complete any pre-application monitoring to examine the distribution and abundance of "important" species and habitats? Critical life history information should include parameters such as feeding areas, wintering areas, and migration routes to the extent that the proposed project is expected to affect these parameters.	Yes	No	Yes	ER 2.4 and 4.3 provide limited information on important species; inadequate information describing recent surveys for important species and habitats to support conclusions.	Yes				
6.5.1	Is the applicant planning on completing pre-operational/operational monitoring related to terrestrial resources? If so, what will each program entail (both in schedule and scope)?	Yes	No	Yes	ER 6.5: NRC may require additional information on recent monitoring efforts and additional information to address monitoring needs regarding potential operation effects (e.g., potential for salt deposition in managed wetland areas) on terrestrial resources on the STP site.	Yes				
6.5.1	Has the applicant supplied a basis for the decision to conduct/not conduct monitoring (pre-application/preoperational/operational)?	Yes	No	Yes	ER 6.5: May need to provide additional justification supporting the conclusion that ecological monitoring is not required	Yes				
6.5.2	Did the applicant complete any pre-application monitoring to examine the distribution and abundance of "important" species and habitats? Critical life history information should include parameters such as spawning areas, nursery grounds, food habits, feeding areas wintering areas, and migration routes to the extent that the proposed project is expected to affect these parameters.	Yes	No	Maybe	There is not sufficient information on species in Colorado River to assess impacts from operation of Units 3&4 since river flows were changed in 1991. Insufficient information in §2.4.2 & §5.3.1.2.1. Location of 1 yr study starting in	Unknown				

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					2007 does not include intake structure on river (Fig. 2.4-2) nor other species than fish. Without sampling this area, may not be able to complete EIS analysis, EFH Assessment with NOAA nor address similar contention as with Vogtle ESP.					
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)?	Yes	No	No	See above response.	Unknown				
6.5.2	Has the applicant supplied a basis for the decision to conduct/not conduct monitoring (preapplication/preoperational/operational)?	No	No	Maybe	Questions about current monitoring were provided at pre-application meeting and trip report, however, ER does not address these questions. It is not clear if current monitoring will be able to provide answers in time for drafting EIS.	Unknown				
6.6	The following list of data describing the CHEMICAL MONITORING should be provided: o systems to be sampled o location of sampling stations o type of sample (e.g., surface grab or depth composite), number of replicates, and method of collecting the sample o time of day, time period, and frequency of sampling o methods of preserving the samples analytical methods used o description of automated monitoring systems	Yes	No	Yes	Reference toTPDES permit, SWPPP, and MSGP without detailed descriptions of calibration standards to verify accuracy, analytical methods used for interpretation, and quality assurance procedures.	Yes	NA		NA	NA

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	used o reference or calibration standards used to verify accuracy of methods statistical methods used to interpret results o quantitative data on chemical characteristics of surface-water and/or groundwater in the site and vicinity, including seasonal ranges and averages and historical extremes. o data quality objectives o quality assurance procedures.									
6.7	Site preparation and construction monitoring commitments.	Yes	Yes	NA	NA	NA	NA		NA	NA
6.7	Preoperational monitoring commitments.	Yes	Yes	NA	NA	NA	NA		NA	NA
6.7	Operational monitoring commitments.	Yes	Yes	NA	NA	NA	NA		NA	NA
6.7	Description of the onsite meteorological measurement program including a description of the local topography of the site and the location of the meteorological tower(s).	Yes	Yes			Yes				
6.7	Discussion of the meteorological measurements, instrumentation, and elevation of the instruments above grade.	Yes	Yes			Yes				
6.7	Discussion of instrument calibration and maintenance procedures, output and recording systems, and data analysis procedures, including quality control.	Yes	No	Yes	ER Section 6.4.3.4.4 doesn't adequately discuss why more recent meteorological data weren't used.	Yes				
7.1	Is the exclusion area boundary definition consistent throughout the ER and Site Safety Analysis Report (SSAR) or Final Safety Analysis Report (FSAR)? If other nuclear facilities are located on the site, is the proposed exclusion area boundary (EAB) consistent with EAB definitions for the other facilities?	Yes	No	Yes	It is not clear from the text in ER Section 5.4.1.3 that direct shine doses at the EAB from Units 3 were calculated using the site EAB. Definition of EAB in FSAR Table 2.0-2 is not consistent with ER definition. FSAR definition is function of meteorology and subject to change. The	Yes				

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					ER definition is fixed in space.					
7.1	Is the low population zone definition consistent throughout the ER and SSAR/FSAR? If other nuclear facilities are located on the site, is the proposed low population zone consistent with low population zone definitions for the other facilities?	Yes	Yes			Yes				
7.1	Are the meteorological data used to calculate X/Qs for DBA analyses the same as the data used to calculate X/Q for routine releases?	Yes	Yes		Note that there is a question about selection of the meteorological data set.	Yes				
7.1	Have the meteorological data on which the X/Q values are based been provided to NRC?	NA	NA		The data are not in the package provided to PNNL	NA				
7.1	Does the ER list the name, version number, and date for any computer code used to calculate the X/Qs used for DBAs?	Yes	No	Yes	The names of codes are listed, but not the version number.	Yes				
7.1	Has the applicant provided NRC with electronic copies of the input to and output from these codes?	NA	NA		The data are not in the package provided to PNNL.	NA				
7.1	Does the ER contain a list of DBAs, and are they the same as the DBAs in the SSAR/FSAR?	Yes	Yes			Yes				
7.1	If the reactor design is certified or undergoing certification, are the DBAs the set of DBAs covered in the design control document 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 DBA analysis in the ER?	Yes	Yes		At least they are consistent with the ABWR DBAs reviewed in the ESP applications.	Yes				
7.1	Are isotopic source terms provided for each DBA?	Yes	Yes			Yes				
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?	Yes	Yes			Yes				
7.1	Are the LPZ X/Qs calculated consistently with NRC guidance?	Yes	No	Yes	Note, however, Secion 2.7.5.1, p. 2.7-19. Defines the LPZ based on the Units 1 and 2	Yes				

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					and describes estimation of distances for dose calculations for Units 3 and 4. There is a question of how exactly the distances were calculated and whether they are conservative.					
7.1	Are the LPZ DBA doses given in the ER consistent with doses calculated from the isotopic source terms?	NA	NA		Not a proper question…requires analysis	NA				
7.1	Are the EAB DBA doses given in the ER consistent with doses calculated from the isotopic source terms?	NA	NA		Not a proper question…requires analysis	NA				
7.1 10 CFR 50 App K SRP 15.6.5	Are DBA doses calculated for a reactor operating at 102% of design power (design power +2% for power measurement uncertainties, where required (e.g., LOCA)?	NA	NA		The DBA doses are calculated from the DCD doses. The DCD has been requested but not been received.	NA				
7.1 10 CFR 50.34(a)(1)(i) Regulatory Guide 1.183	Are EAB doses calculated for the two-hour period giving the highest dose? Is the two-hour period identified?	Yes	Yes		The ABWR uses a TID source term thus the first 2 hours is the period with the highest doses.	Yes				
7.1 10 CFR 50.34 SRP 15	Are EAB DBA doses less than dose limits and criteria set for safety reviews?	Yes	Yes			Yes				
7.1 10 CFR 100	Is the exclusion area boundary definition appropriate?	Yes	Yes			Yes				
7.1 10 CFR 100 NUREG-0654	Is the low population zone definition appropriate?	Yes	Yes			Yes				
7.1 Regulatory Guide 1.145	Are the X/Q values used for DBA analyses, for representative (50%) meteorological conditions? If so, were the procedures used to calculate the X/Q values consistent with NRC guidance?	Yes	No	Yes	Note, however, Section 2.7.5.1, p. 2.7-19. Defines the EAB based on the Units 1 and 2 and describes estimation of distances for dose calculations for Units 3 and 4. There	Yes				

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					is a question of how exactly the distances were calculated and whether they are conservative.					
7.1 Regulatory Guide 1.3, 1.4, 1.145, 1.183	Are DBA LPZ doses calculated for four time periods as indicated in ESRP 7.1, and Regulatory Guides 1.3, 1.4, 1.145, etc.	Yes	Yes			Yes				
7.1 Regulatory Guides 1.3, 1.4, 1.183	Do the DBA doses appropriately account for changes in breathing rates?	NA	NA		The DBA doses are calculated from the DCD doses. The DCD has been requested but not been received.	NA				
7.1 10 CFR 50.34 SRP 15	Are LPZ DBA doses less than dose limits and criteria set for safety reviews?	Yes	Yes			Yes				
7.2	Does the ER contain a site-specific evaluation the potential impacts of severe accidents based results of a recognized tool such as the MACCS2 code?	Yes	Yes			Yes				
7.2	If so, what are the name, version, date, etc. for the code used?	Yes	No	Yes	The code version and date are missing	Yes				
7.2	What meteorological data were used in the evaluation? Are they the same data used in evaluation of the impacts of normal operation and DBAs? If not, why not? (Check with meteorology project reviewer)	Yes	Yes		Note that there is a question about selection of the meteorological data set.	Yes				
7.2	What population data were used in the evaluation? Are the data consistent with data presented in the demographic discussion? Are population projections based on the most recent census and appropriate projection techniques? (Check with socioeconomic project reviewer)	Yes	No	Yes	ER Section 7.2.1 says the population data were adjusted, but does not say how.	Yes				
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)	Yes	No	Yes	ER Section 7.2 et seq. does not discuss the source or adjustment of land use data.	Yes				
7.2	Does the ER contain a list of surface water users within 50 miles of the site, including all public water supplies and major industrial and	Yes	No	Yes	The surface water users discussed in Section 2.3.2.1 does	Yes				

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	agricultural users? Does the list include location and withdrawal rate of each user? (Check with hydrology project reviewer)				not include users within the Tres Palacios River Basin.					
7.2	Does the ER contain 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 design control document or FSAR for the reactor type?	No	No	Yes	ER Section 7.2.1 et seq. does not discuss individual severe accident sequences.	Yes				
7.2	Has the applicant provided electronic copies of the input to and output from the computer code?	NA	NA		The data are not in the package provided to PNNL.	NA				
7.2	Does the severe accident analysis in the ER consider the atmospheric, surface water, and groundwater pathways?	Yes	No	Yes	The ER accident analyses (Section 7.2.2.1 and 7.2.2.1) do not provide sufficient detail for the pathways	Yes				
7.2	Does the severe accident analysis include output for socioeconomic, individual and population health effects?	Yes	No	Yes	ER Section 7.2.1 et seq. does not discuss individual severe accident sequences	Yes				
7.2	If the application references a reactor design other than a certified design, does the ER list the dominant severe accident sequences.	NA	NA			NA				
7.2	Are these effects adequately reflected in the ER in terms of risk.	NA	NA			NA				
7.3	Does the ER (or SSAR/FSAR) contain a list of leading contributors to (1) core damage frequency, (2) large release frequency, and (3) dose consequences with and without mitigation?	Yes (DCD)	Yes		This is a bad question. Wrong focus.	Yes				
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?	Yes (DCD)	Yes		This is a bad question.	Yes				
7.3	Does the ER contain the estimated cost, risk reduction, and value impact ratios for the selected SAMAs along with the underlying assumptions?	No	Yes		This is a bad question.	Yes				
7.3	A list of SAMAs that have been or will be	No	Yes		This is a bad question.	Yes				

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	implemented to prevent or mitigate the impacts from severe accidents or to reduce the risk of a severe accident?									
7.4	Does this section contain a statement about the comparison of the applicant's spent fuel characteristics with respect to the 10 CFR 51.52(a) conditions?	Yes	Yes	NA		Yes	NA		Yes	NA
7.4	Does this section specify the estimated distance from the proposed reactor site to the spent fuel disposal facility?	Yes	Yes		NA	Yes	NA		Yes	NA
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?	Yes	Yes		NA	Yes	NA		Yes	NA
8.1	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 intertie, including capacity, constraints within the service area, and (4) new transmission capacity if required.	Yes	Yes			Yes				
8.1	Number and types of customers and major electrical load centers in the relevant service area.	No		Yes	Possibly not really relevant for a merchant plant.	Yes				
8.1	System factors that are unique to the power system (e.g., power pool agreements and reserve margin requirements).	Yes	Yes			Yes				
8.2.1	Methodology, assumptions, and information sources used to develop the forecasts of electricity consumption, peak load demand, and load factor.	Yes	Yes			Yes				
8.2.1	Chart or table of historical and projected yearly electricity consumption, system peak-load demand, and load factor for the relevant service area(s) and principal reasons for the increase in consumption/ demand and shifts in the load factor.	Yes	Yes			Yes				

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8.2.1	Results of any independent assessments of the forecasted electricity consumption and peak load demand.	Yes	Yes		Adopted independent regional load forecast	Yes				
8.2.1	Comparison of forecasted electricity consumption and peak load demand to other independent forecasts and reasons for significant differences.	Yes	Yes		Adopted independent regional load forecast	Yes				
8.2.1	Identification of expected customers (or firm power sales) for the power to be supplied by the proposed facility and any signed agreements for the purchase of the power; obtain estimate of forecasted power sales by the applicant in the relevant service area [Note: This information is likely to be business sensitive and/or proprietary information.].	No		Yes	Relevance for a merchant plant is questionable	Yes				
8.2.2	Historical and projected economic, weather, price of electricity, energy mix, and demographic/population trends that are driving the growth in electricity demand.	Yes	Yes			Yes				
8.2.2	Methodology and information sources used to develop the forecast of economic, weather, price of electricity, energy mix, and demographic/ population trends.	Yes	Yes			Yes				
8.3	Description of the electricity supply mix in the relevant service area, historical and projected contribution of each to total annual electricity consumption and peak-load demand, and factors driving the change in electricity supply mix.	Yes	Yes			Yes				
8.3	Description of the methodology, assumptions, and information sources used to develop the forecast of electricity supply mix.	Yes	Yes			Yes				
8.3	Identification of offsite areas by land use, size, and location (from site visit, and consultation with Federal, State, regional, local, and Native American tribal agencies)	NA	NA		If "offsite" means "relevant service area" that is well-explained	NA				
8.3	Identification of existing power facilities that serve the relevant service area, and their associated electricity generation capacity, whose retirement has been announced or is anticipated within a few years before and after start of operation of the applicant's proposed facility.	Yes	Yes			Yes				

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8.3	Identification of firmly committed new facilities and proposed new facilities that will serve the relevant service area, and their associated electricity generation capacity, that are expected to start operation between a few years before and after start of operation of the applicant's proposed facility.	Yes	Yes			Yes				
8.3	Estimate of forecasted electricity supply by the applicant in the relevant service area and source of the supply (e.g., existing facilities co-owned by the applicant, purchased power, and new capacity) area [Note: This information is likely to be business sensitive and/or proprietary information.].	Yes	Yes			Yes				
8.4	Historical and projected reserve margin for the relevant service area.	Yes	Yes			Yes				
8.4	Applicant's historical and projected reserve margin, and how this changes with the proposed new facility; identify any agreements with government/semi-government entities to maintain a minimum reserve margin and/or reserve margin range in the relevant service area.	NA	NA		Not applicable, except at the ERCOT level	NA				
9.1	Discussion of the no-action alternative.	Yes	Yes			Yes				
9.2.1	The administrative structure of the current generating supply system in the relevant regional grid and the applicant's relationship to this structure in terms of current and projected power supply. Full account should be taken of non-discriminatory access rules as promulgated by the Federal Energy Regulatory Commission (FERC).	NA	NA			NA				
9.2.1	The projected regional system reserve margins of relevant electric utilities and other generators should be for a six-year period starting with the first year of commercial operation of the proposed facility.	NA	NA			NA				
9.2.1	The projected peak loads of the electric utilities in the area being served, load duration curve, and baseload for the same six-year period.	NA	NA			NA				
9.2.1	Transmission intertie capability within the relevant region's facility and between the systems	NA	NA			NA				

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	identified in the first bulleted item in this list during the initial years of facility operation.									
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 should also be considered.	Yes	No	Yes	Issue is discussed in Section 9.2.1.2 of the ER. No information is included in the ER on non-nuclear units owned by the applicant that are scheduled for retirement.	Yes				
9.2.1	The expected facility generating capacity, projected availability factor, environmental impacts, and operating costs (including capital costs required to put the unit back online) of any facilities with the potential for reactivation or extended operation.	No	No	Yes	Issue is discussed in Section 9.2.1.2 of the ER. No information is included in the ER on non-nuclear units owned by the applicant that are scheduled for retirement.	Yes				
9.2.1	The potential for energy conservation within the relevant service area.	Yes	Yes			Yes				
9.2.2	For alternatives that have not yet achieved commercial acceptance, U.S. Department of Energy research, development, and demonstration/ commercialization schedules and projected capability as a source of central station power.	Yes	Yes			Yes				
9.2.2	For nonrenewable fuels (coal, natural gas, and petroleum fuels), the fuel quality, availability to the applicant, 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.	Yes	Yes			Yes				
9.2.2	For renewable fuels (wind, geothermal, hydro-electric, wood waste and municipal solid waste, energy crops, and solar), availability to the applicant, quantities needed, potential environ-mental restrictions, amount of land that would be occupied, and amount of the fuel available.	Yes	Yes			Yes				

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9.2.3	Decommissioning cost for the proposed project and for each alternative.	Yes for proposed project. No for energy alterna-tives.	Yes			Yes				
9.2.3	Where relevant, the fixed charge rate for the utility or consortium of utilities.	NA	NA			NA				
9.2.3	Fuel cost estimates at time of application for the proposed project and for other alternatives.	NA	NA			NA				
9.2.3	The operation and maintenance cost estimates (fixed component and variable component) at time of application for the proposed project and each alternative.	NA	NA			NA				
9.2.3	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 alternative.	NA	NA			NA				
9.2.3	The discount rate for the proposed project and each alternative.	NA	NA			NA				
9.3	The objectives of the alternative site selection process.	Yes	Yes			Yes				
9.3	The basic constraints and limitations (e.g., rules, regulations, and laws), giving the basis and rationale for the alternative site selection process.	Yes	Yes			Yes				
9.3	The selection procedures for the region of interest (ROI), candidate areas, potential sites, candidate sites, and proposed site.	Yes	Yes			Yes				
9.3	The basis for establishing the geographical scope of the ROI.	Yes	Yes			Yes				
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).	Yes	Yes			Yes				
9.3	The criteria used to screen potential sites.	Yes	Yes			Yes				
9.3	The methodologies used in the candidate site comparison process, including (when used)	Yes	Yes			Yes				

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	factors such as (1) importance factors, (2) preference functions, (3) utility functions, (4) weighing factors, (5) ranking scales, (6) scoring schemes, (7) rating systems, and (8) sensitivity analyses.									
9.3	A description of the geographic area considered by the applicant, including the following: o major centers of population o areas predicted to be deficient in power o economic, demographic, and community characteristics o minority and low-income populations o water bodies available for cooling o railroads, highways, and waterways (existing and planned) o topographic features o major land-use classifications (e.g., residential, agricultural) and areas reserved for specific uses o location and description of existing and planned primary electrical generating stations o existing and planned transmission network o transmission interconnections with other utilities o 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.	Yes (the ER considers most, but not all, of the criteria)	Yes			Yes				
9.3	Descriptions of the following: o ROI o potential sites (including all sites within the ROI with an operating nuclear power facility or a construction permit for a nuclear power facility) o candidate sites o alternative sites.	Yes	No	Maybe	With one exception, Section 9.3.1.3.1 et seq. of the ER description of potential sites doesn't contain details like how many, where, why were specific sites eliminated. Similarly, Sections 9.3.1.3.3 et seq of the ER don't contain any	Unknown				

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					details related to specific candidate sites other than those chosen as alternative sites. How many were there? Where were they located? Why were they dropped? These discussions lack the details to support the conclusions presented.					
9.3	Descriptions of how the site- selection process was used to identify and select the ROI and potential, candidate, and alternative sites.	Yes	No	Maybe	The process of going from ROI to alternative sites is given in general terms in ER Sections 9.3.1 et seq. The selection of ROI and candidate area is probably OK, but the jump from candidate area to alternative sites is too great. There are no details related to candidate sites…how many, where, why were specific candidate sites eliminated? How is the NRC to conclude that the alternative sites selected are among the "best available sites?" ER Sections 9.3.1.2, 9.3.1.3, and 9.3.1.4 all contain statements that "STPNOC eliminated sites that lacked suitable cooling water	Unknown				

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					sources. Section 9.3.2.1.3 indicates that the Limestone Site would use dry cooling towers. Why, if there is adequate water available? Section 9.3.2.2.3 indicates that the cooling reservoir won't be available when needed and there may be a problem getting water for operation before the reservoir is completed. Section 9.3.2.3.3 doesn't give a specific source for water, it just says water is available. These sections raise doubts that the respective alternatives are viable under the STPNOC criterion of water availability or that they are among the "best available site." Either there needs to better justification that these are among the "best available site," or there has to be better demonstration that the sites or viable, or there have to be better alternative sites.					
9.3	Data sources used in the site-selection process, including results of site-specific field	No	No	Yes	ER Sections 9.3.1.x are totally devoid of	Yes				

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	investigations.				references to appropriate sources of data for use in the site selection process.					
9.3	Has the applicant described the aquatic resources for the alternative locations?	Yes	No §9.3.2.1.5, §9.3.2.2.5, §9.3.2.3.5, §9.3.2.4.5, Table 9.3-1, Table 9.3-2	Maybe	Context of assumptions for Allen's Creek (9.3.2.2.5) is a different time period than for Units 3 & 4 and other alternative sites.	Unknown				
9.3	Are the construction impacts to aquatic resources considered?	Yes	No §9.3.2.1.5, §9.3.2.2.5, §9.3.2.3.5, §9.3.2.4.5, Table 9.3-1, Table 9.3-2	Maybe	Context of assumptions for Allen's Creek (9.3.2.2.5) is a different time period than for Units 3 & 4 and other alternative sites.	Unknown				
9.3	Are the operational impacts to aquatic resources considered?	Yes	No §9.3.2.1.5, §9.3.2.2.5, §9.3.2.3.5, §9.3.2.4.5, Table 9.3-1, Table 9.3-2	Maybe	Context of assumptions for Allen's Creek (§9.3.2.2.5) is a different time period than for Units 3 & 4 and other alternative sites.	Unknown				
9.3	Has the applicant described the terrestrial resources for the alternative locations?	Yes	No	Yes	Information for the Allen's Creek site is	Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
					dated.					
9.3	Are the construction impacts to terrestrial resources considered?	Yes	No	Yes	Information for the Allen's Creek site is dated.	Yes				
9.3	Are the operation impacts to terrestrial resources considered?	Yes	No	Yes	Information for the Allen's Creek site is dated.	Yes				
9.4.1	The proposed heat dissipation system for each potential alternative, as follows, is necessary: o land-use requirements o water-use requirements o operating and maintenance experience for similar units o capital, maintenance, and operating costs o effect on generating efficiency o predicted thermal and physical effects, e.g., thermal plume and scouring o predicted atmospheric effects, e.g., fogging, icing, and drift o predicted operating noise levels • predicted aesthetic effect, e.g., visual plumes o predicted recreational benefits.	Yes	No	Yes	Partial water use requirements are described in ER Section 9.4.1.	Yes				
9.4.2	For intake systems, the following information is required: o 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 o alternative pumping facilities, if proposed o alternative locations of the proposed intake system and pumping facility on the same waterbody o alternative procedures and schedules for intake defouling, including any use of defouling chemicals o descriptions and operational characteristics of any alternative trash racks, traveling screens, trash baskets, or fish return systems o predicted physical impacts from hydrologic alternatives and impacts to aquatic ecosystems, including entrapment, impingement, and	Yes	No	Yes	Partial description of alternate intake system locations, partial description of impacts to aquatic ecosystems, and partial description of capital, maintenance, and operating costs. No cost information.	Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
	entrainment, for each alternative intake system o capital, maintenance, and operating costs for each alternative intake system and costs associated with system adaptation to the proposed site.									
9.4.2	For discharge systems, the following information is required: o 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 o description of alternative discharge lines (or canals) from the heat dissipation system to the receiving water body o description of alternative locations of the proposed discharge system on the same water body o estimated physical impacts from hydrologic alterations and impacts to aquatic biota for each alternative discharge system o capital, maintenance, and operating costs for each alternative discharge system and costs associated with system adaptation to the proposed site.	Yes	No	Yes	Partial description of alternative discharge systems, missing preliminary designs, and missing operational characteristics.	Yes				
9.4.2	For the water supply, the following information: o description of potential alternative sources of water and their availability, including location of water supply source with respect to the facility site o economic and environmental cost data for water delivered from each alternative source.	Yes	No	Yes	Partial description of availability of alternative water supply sources, and partial cost information.	Yes				
9.4.2	For water treatment, the following information is required: o description and purpose of alternative water treatment systems for the circulating water system and the facility (service) water system o chemicals and additives (or mechanical treatment) to be used in each alternative water treatment system	Yes	No	Yes	Reference to TPDES permit and estimated small impact of existing MCR blowdown discharge to justify absence of environmentally preferable alternatives.	Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
	o operating cycles for each alternative water treatment system o capital, maintenance, and operating costs for each alternative water treatment system.									
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.	Yes	No	Yes	Partial cost information.	Yes				
9.4.3	For alternative transmission corridor routes: o maps or aerial photographs showing alternative transmission corridors from the station site to interconnecting points on the existing high voltage system and identifying corridor characteristics (e.g., new lines/towers on existing corridors, widening of existing corridors, and new corridors). o maps or aerial photographs showing existing and known future generating stations and transmission networks for the service area or affected region. For existing transmission corridors not proposed as alternatives to the proposed system, reasons why they were not considered (e.g., system reliability) should be provided. o lengths and widths of corridors for each alternative segment or corridor. o number and approximate location of known historic/archaeological sites within 2 km of the alternative corridor. o maps or aerial photographs showing the approximate locations of Federal, State, or private wildlife refuges or other areas dedicated to ecological preservation, management, or study that are within 1 km of alternative corridors. o corridor proximity to airports, roads, railroads, or other transportation facilities. o general land-use characteristics along the alternative corridors, expressed as percentages of total corridor length and in terms of the intensity of use (e.g., residential density) for the following classifications:	NA	NA			NA				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
	➢ agricultural ➢ forest, woodland ➢ rangeland									
	➢ recreational or ecologically sensitive areas such as parks, wildlife preserves/refuges or management areas, wetlands, wild and scenic rivers ➢ urban or residential areas ➢ commercial or industrial areas ➢ other potentially significant classifications (e.g., Federally owned lands, Native American tribal lands, ethnic enclaves, or areas of high minority population) ➢ potential geologic hazards (e.g., active faults) that could affect transmission system reliability.									
9.4:3	For alternative system design, construction, and maintenance practices, the following information: o alternative voltage levels and transmission frequency that are compatible with the existing service area/regional transmission network o alternative tower designs for areas of potential visual impact o alternative tower heights and conductor-to-ground clearances o alternative conductor designs o underground placement in areas of potentially high impact o alternative construction practices, including vegetation clearing; erosion control; revegetation; access road design, location, and maintenance; tower placement, foundations, and installation; and conductor installation o alternative maintenance practices o alternative location of auxiliary transmission facilities, e.g., substations, microwave relay stations.	NA	NA			NA				
9.4.3	For the alternative transmission selection process and cost data, the following information is required: o discussion of the selection process used to	NA	NA			NA				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
	evaluate transmission line routes and the rationale and criteria used to select the proposed route									
	o acquisition cost data for the proposed and alternative route corridors o construction and maintenance costs for the proposed system and for principal system alternatives o estimated transmission line losses for the proposed system and for principal alternatives.									
10.4.1	The annual average electrical-energy generation (kW-hr) and the annual production of any other beneficial or revenue-producing products. [ESRP 3.2]	Yes	Yes			Yes				
10.4.1	Data on other benefits, quantified to the extent possible (e.g., annual local, State, and Federal tax payments, number and type of jobs, and total annual wages paid). [ESRPs 4.4.2, 5.8.2]	Yes	Yes		Talked about taxes, jobs, and income	Yes				
10.4.1	Description of other nonquantifiable or nonmonetary benefits (e.g., new recreational facilities). [ESRPs 4.1.1 through 5.8.3]	Yes	Yes		In particular, discussed diversity of fuel mix in regional generating capacity, emissions reduction	Yes				
10.4.1	Description of differences in benefits between alternatives and system configurations. [ESRPs 9.4.1, 9.4.2, 9.4.3]	Yes	Yes		Qualitative discussion	Yes				
10.4.2	Estimates of the capital cost, annual operating and maintenance costs, decommissioning costs, and any other internal costs of the proposed facility, including alternative modifications. [ESRP 9.4.1, 9.4.2, 9.4.3]	Yes	Yes		Showed capital and operating costs; land commitment, water use; materials used to build the plant; environmental and socioeconomic effects	Yes				
10.4.2	Description of differences in costs between alternatives and alternative system configurations. [ESRPs 9.4.1, 9.4.2, 9.4.3]	No	No	Yes	The ER has a screening analysis of system features for six alternatives, but not costs	Yes				
10.4.2	Comparison of the estimated costs of the proposed facility with other independent or	Yes	Yes		The applicant did not provide a detailed cost	Yes				

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	applicant-commissioned cost estimates and reasons for significant differences.				estimate based on design but rather drew heavily from other cost analyses					
RG 4.2, Rev 2: Page 5-1	Assess the proposed action for cumulative and projected long-term effects from the point of view that each generation is trustee of the environment for each succeeding generation.	Yes	Yes	NA	NA	NA	NA		NA	NA
RG 4.2, Rev 2: Page 5-3	Information concerning any cumulative buildup of radionuclides in the environment, such as in sediments.	Yes	Yes	NA	NA	NA	NA		NA	NA
Cumulative Impacts (No ESRP Section)	Has the applicant identified the activities of other agencies that have occurred/will occur in the potential impact area that may contribute to a cumulative impact on terrestrial or aquatic resources?		No §10.5S.1.3, §10.5S.2.3	Yes	Need further information to support conclusion that there are no "other past, present, or future actions in the region that would significantly affect wildlife and wildlife habitat."	Yes				
Cumulative Impacts (No ESRP Section)	Has the applicant identified projects in the region that may contribute to a cumulative impact on "important species" or habitat?		No §10.5S.1.3, §10.5S.2.3	Yes	Need further information to support conclusion that there are no "other past, present, or future actions in the region that would significantly affect wildlife and wildlife habitat."	Yes				
Cumulative Impacts (No ESRP Section)	Has the applicant identified the activities of other agencies that have occurred/will occur in the potential impact area that may contribute to a cumulative impact on terrestrial or aquatic resources?	Yes	No	Yes	Need further information to support conclusion that there are no "other past, present, or future actions in the region that would significantly affect wildlife and wildlife habitat."	Yes				

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		2.	3.	4.	5.	7.	8.	9.	10.	11.
Cumulative Impacts (No ESRP Section)	Has the applicant identified projects in the region that may contribute to a cumulative impact on "important species" or habitat?	Yes	No	Yes	Need further information to support conclusion that there are no "other past, present, or future actions in the region that would significantly affect wildlife and wildlife habitat."	Yes				
Land Use	Adequate land use information for the Limestone alternative site?	Partially	No	Yes	Need information on (1) site zoning and (2) the land use impacts of the planned new coal fired unit at the site and the FutureGen project	Yes				
Land Use	Adequate land use information for the Allen's Creek alternative site?	Partially	No	Yes	Need information on site zoning and potential size of reservoir	Yes				
Land Use	Adequate land use information for the Malakoff alternative site?	Partially	No	Yes	Need information on site zoning, land ownership, and availability of the land	Yes				
Meteorology	Air quality and noise Impacts during construction.	Yes	No	Yes	ER Sections 4.4.1 et seq. need to be clarified with respect to impacts of offsite activities related to construction. Also commitments related to potential mitigation measured need to be clearly stated. Section 5.3.4.2. Need a reference for the cooling tower noise level.	Yes				

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Meteorology	Base-line noise evaluation	NA	No	Yes	ER Section 2.7.7 states that noise measure-ments have not been made at the STP site. Why not? Are there no more recent references on ambient noise levels than 1974?	Yes				
Transmission Lines	Adequate transmission line information for the Limestone alternative site?	Yes	Yes	Yes		Yes				
Transmission Lines	Adequate transmission line information for the Allen's Creek alternative site?	Partially	No	Yes	Need information on the dimensions of new corridors.	Yes				
Transmission Lines	Adequate transmission line information for the Limestone alternative site?	Partially	No	Yes	Need information on the dimensions of new corridors.	Yes				