

NUREG-1748 SECTION	ACCEPTANCE CRITERIA	SUBCRITERIA	ENVIRONMENTAL REPORT SECTION
6.1 Introduction			
The introduction should be brief, and should include a description of the proposed action, a brief summary of pertinent statutes and regulations, location of the proposed action and relevant background information. Key dates and deadlines should also be listed to establish the time frame for the proposed action.			
	<p>6.1.1 Purpose and Need for the Proposed Action</p> <p>In short, the need describes what will be accomplished as a result of the proposed action.</p>	The applicant/licensee should explain why the proposed action is needed. This section of the ER describes the underlying need for the proposed action and should not be written merely as a justification of the proposed action, nor to alter the choice of alternatives. Another common mistake is to identify compliance with NEPA and CEQ regulations as the need. Examples of need include a benefit provided if the proposed action is granted or descriptions of the detriment that will be experienced without approval of the proposed action.	Section 1.5
	6.1.2 The Proposed Action	<ul style="list-style-type: none"> • Brief description of the proposed action, including the name of the applicant/licensee; • Regional and site area maps, including nearby towns and natural features; • Schedule of the major steps comprising the proposed action, such as construction, operation, decommissioning (i.e., start and completion dates of major activities); and 	Section 1.4, Figures 1-1 and 1-2
	6.1.3 Applicable Regulatory Requirements, Permits, and Required Consultations	<ul style="list-style-type: none"> • Name of each consultation, review, approval, and authorization, and the applicable law, ordinance, or regulation; • Activity to be covered by the consultation, review, approval, or authorization (e.g., permit); • Current status of each consultation, review, approval, and authorization; • Potential administrative delays or other problems preventing agency consultation, review, approval, or authorization; and • Documentation of any consultation or survey conducted, such as wildlife surveys (periodic or one-time) or archaeological surveys. 	Section 1.6 and Section 3.6
6.2 Alternatives	6.2.1 Detailed Description of the Alternatives	Identify the no-action alternative, the proposed action, and any reasonable alternatives. Discuss the technical design requirements for the proposed action and the reasonable alternatives. It is possible to have options under an alternative (e.g., the possibility of additional ground water remediation) and those options should be discussed.	

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	6.2.1.1 No-Action Alternative	The applicant/licensee should identify the no-action alternative in order to provide a baseline to compare the proposed action and reasonable alternatives. The no-action alternative is the status-quo.	Section 2.1.1
		Description of the no-action alternative; and Summary of the major impacts should the no-action alternative be chosen.	Section 2.1.1 Section 4
	6.2.1.2 Proposed Action	Detailed description of the proposed action, the general project progression and pre-operational, operational, and post-operations activities, as appropriate;	Section 1.4, Section 2.1.2 and Section 4
		Full names of all organizations sharing ownership of the proposed action;	Section 2.1.2
		The major impacts from performing the proposed action;	Section 2.1.2 and Section 4
		Measures used to mitigate impacts;	Section 5
		Restoration actions; and	Section 2.1.2
		Proposed monitoring.	Section 6
		Current State of the Facility	Section 1.2
		Site location, including distance and direction from the nearest major city, nearby towns, nearby inhabitants, and landmarks, including highways, rivers, or other bodies of water;	Section 1.2 and Section 3
		Facility latitude and longitude coordinates;	Section 1.2
		Areal extent of the site and facility layout;	Figure 1-2
		Sufficiently detailed map showing highways and railroad lines that cross the site;	Figure 1-2, Figure 3-4
		Aerial view or perspective drawing of the site with an indication of the facility boundary (in at least one drawing the facility site boundary should occupy about 10 percent of the view);	Figures 1-1 and 1-2
		Layout of facilities and other features within the site boundary with the same scale as those provided for Section 6.4, <i>Environmental Impacts</i> ;	Figure 1-2
		List of buildings or areas used for chemical storage, waste management, vehicle cleaning, administration, operations and maintenance, generating electricity, health and security, parking, etc.;	Figure 1-5
		Underground storage tanks, wells, pipelines, and sewage system;	Wells shown in Figure 1-11, Figure 1-24, Figures 1-29 through 29B Figure 1-38, Figure 1-39, Figure 1-40, Figure 1-41, and Figure 1-42.
		Description of types of operations that will be conducted on the site;	Section 2.1.2
		Identification of radionuclides and other hazardous materials used;	Section 1.1, Section 1.2.1
		Summary of how materials are stored, handled, utilized and disposed; and	Section 1.2.1
		<ul style="list-style-type: none"> Air, ground water, and surface water, monitoring stations. 	Wells shown in Figure 1-11, Figure 1-24, Figures 1-29 through 29B Figure 1-38, Figure 1-39, Figure 1-40, Figure 1-41, and Figure 1-42. Air monitoring locations shown in Figure 1-37. No perennial surface water in study area, no surface water monitoring stations in study area.
	6.2.1.3 Reasonable Alternatives	The applicant/licensee should summarize the history and process used to formulate the reasonable alternatives.	Section 1.2.1

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		A description of the alternative;	Section 2.1.2
		The major impacts;	Section 2.1.2 and Section 4
		Measures used to mitigate impacts;	Section 5
		Restoration and management actions; and	Section 1.4
		Proposed monitoring.	Section 6
	6.2.2 Alternatives Considered but Eliminated	Summary of alternatives not considered to be reasonable; and	Section 2.1.5
		Summary of why these alternatives were eliminated from further study.	No alternatives were considered but eliminated.
	6.2.3 Cumulative Effects	Discuss any past, present, or reasonably foreseeable future actions which could result in cumulative impacts when combined with the proposed action.	Section 2.2
	6.2.4 Comparison of the Predicted Environmental Impacts		Section 4
	6.3 Description of the Affected Environment	The description of the affected environment focuses on baseline conditions, i.e., the status quo. The baseline conditions will be used to assess the impacts discussed in Section 6.4, <i>Environmental Impacts</i> .	Section 3
	6.3.1 Land Use	The applicant/licensee should describe land uses near the site. This section provides input to various sections including, but not limited to, Sections 6.4.1, <i>Land Use Impacts</i> ; 6.4.4, <i>Water Resources Impacts</i> ; 6.4.12, <i>Public and Occupational Health Impacts</i> ; and 6.6, <i>Environmental Measurements and Monitoring Program</i> .	Section 3.1
		Maps showing major land use, public, and trust land areas;	Figure 3-2 through Figure 3-4
		Description of the regional setting, transportation corridors, and offsite areas;	Sections 3.2, 3.3, 3.4 and 3.5, Figure 3-1, Figure 3-2, and Figure 3-3
		Land areas devoted to major uses according to U.S. Geological Survey land use categories;	Figure 3-2, Table 3-2 and 3-3
		Information from the U.S. Department of Agriculture Natural Resources Conservation Service on the relative value of the facility if it involves farmland;	Not Applicable
		Land-use plans including current, future, and proposed (those which have been formally proposed by the appropriate governing body in a written form and are being actively pursued by officials of the jurisdiction) plans;	Not Applicable
		Staged plans, which must go through phases of development, including those that are incomplete;	Not Applicable
		Special land-use classifications (e.g., American Indian or military reservations, wild and scenic rivers, State and national parks, national forests, designated coastal zone areas, wildlife refuges, wilderness areas, and prime and unique farmlands);	Figure 3-1
		Mineral resources;	Not Applicable
		Principal agricultural products, location, and average annual yields (including growing and grazing period, fraction of daily intake from pasture, fraction of the year that leafy vegetables are grown, and amount consumed);	Not Applicable
		Present commercial fish and invertebrate catch; and	Not Applicable
		Unusual animals, facilities, agricultural practices, game harvests, or food processing operations.	Not Applicable

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	6.3.2 Transportation	The applicant/licensee should describe transportation facilities at and near the site.	Section 3.2
		Proposed routes for transportation corridors that will be used for transportation access to and from the facility site; and	Section 3.2 and Section 4.2
		Corridor lengths, widths, and areas including: <ul style="list-style-type: none"> ○ - Identification of offsite transportation areas by land use, size, and location; and ○ - Land use restricting transportation corridors contained in any easements. 	Not Applicable
	6.3.3 Geology and Soils	The applicant/licensee should identify the geological, seismological, and geotechnical characteristics of the site and vicinity.	Section 3.3
		Stratigraphy and structures, including descriptions of geological units, major structural and tectonic features (e.g., faults), and any other significant geological conditions;	Section 3.3
		Geotechnical investigations conducted to characterize the site;	Section 3.3
		Characteristics of soil, including a physical description of the soil units and descriptions of features related to soils at the site and nearby; and	Section 3.3.4
		Analysis and evaluation of the local and regional seismicity data, volcanism, or any information that may indicate a geologic hazard at the site.	Not Applicable
	6.3.4 Water Resources	The applicant/licensee should describe site-specific and regional data on the physical and hydrological characteristics of ground and surface water in sufficient detail to provide the basic data for the evaluation of impacts on water bodies, aquifers, aquatic ecosystems, and social and economic structures of the area.	Section 3.3 and Section 3.4
		Maps showing: <ul style="list-style-type: none"> ○ - The spatial and temporal relationship of the site to the major surface and subsurface hydrological systems such as aquifer systems and drainage basins; ○ - Surface and subsurface systems that could be affected by facility withdrawals and/or discharges (cross sections where feasible); 	Figures 3-5 through 3-33
		Mean, range, and temporal and spatial variations of the subsurface and surface water quality characteristics including water temperature, chemical, biological, and physical characteristics typically monitored [WWW at < http://www.epa.gov/storet >, (EPA, 2003a)];	Section 3.4
		Descriptions of preexisting environmental conditions and their effects on subsurface and surface water quality (e.g., water bodies at or near the site that do not meet established water quality standards) and quantity;	Not Applicable

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		Historical and current hydrological data from non-related projects in the region or area of influence (e.g., reservoirs built and operated during the period of record; scheduled construction of dams; local drinking water, agricultural, or industrial wells), and projected data describing future trends, if available;	No Applicable
		Interpolated and extrapolated measurements using acceptable geostatistical techniques if data are incomplete or unavailable;	No Applicable
		Summary of methodology used to estimate hydrological parameters;	
		Water rights and resources;	Section 3.4.3.3
		Quantitative description of subsurface and surface water uses such as withdrawals, consumption, and returns, including but not limited to, domestic, municipal, agricultural, industrial, mining, recreation, navigation, and hydroelectric power;	Section 3.4.3.3 and Section 1.2.2
		Quantitative and qualitative description of recreational, navigational, instream, and other non- consumptive water uses including the use rate with time variation;	Not Applicable
		Descriptions of past, current, and future pollutant sources with discharges to water 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;	Section 1.1, Section 1.2.1, Section 1.2.2, Section 3.4.3.2
		Description of wetlands [WWW at < http://www.usace.army.mil/inet/functions/cw/cecwo/reg/techbio.htm > (USACE, 2003)]; and	Not Applicable
		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.	Figure 2-6 and Section 3.4.3.3
		<p>Surface Water Characteristics for the following categories:</p> <ul style="list-style-type: none"> • Freshwater streams, lakes and impoundments, and estuaries and oceans; • Flood frequency distributions, including levee failures; • Flood control measures (reservoirs, levees, flood forecasting); • Location, size, and elevation of outfall; • Velocity distribution (horizontal and vertical) and waterbody cross section within the influence of any outfall; • Bathymetry near any outfall; • Estimated erosion characteristics and sediment transport for surface-water bodies and wetlands, including rate, bed, suspended load fractions, and gradation analyses; • Description of the floodplain and its relationship to the site [WWW at <http://www.fema.gov/mit/tsd/> (FEMA, 2003)]; and • Description of the design-basis flood elevation; and, where applicable, the design-basis flood discharge. 	No perennial surface water at the GRP

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		<p>Freshwater streams (for the watershed containing the site):</p> <ul style="list-style-type: none"> ○ Major streams, size of drainage areas, and gradient; ○ Historic monthly flow information, including maximum, average-maximum, average, average- minimum, and minimum flow; ○ Historical drought stages and discharges by month, and the 7-day once-in-10-yr low flow; and ○ Important short-duration flow fluctuations (e.g., diurnal release variations from peaking operation of upstream hydroelectric project). 	Section 3.4.1
		<p>Lakes and impoundments:</p> <ul style="list-style-type: none"> ○ Elevation-area-capacity curves; ○ Reservoir operating rules; ○ Annual yield and dependability; ○ Variations in inflows, outflows, water-surface elevations, and storage volumes and retention times; ○ Net loss, including evaporation and seepage; ○ Current patterns, including frequency distributions of current speed, direction, and persistence; and ○ Temperature distribution (horizontal and vertical) and stratification and seasonal variations of density-induced currents. 	Not Applicable, no water resource lakes or impoundments in study area
		<p>Estuaries and oceans:</p> <ul style="list-style-type: none"> ○ Shoreline and bottom descriptions, including seasonal variations due to sediment transport; ○ Tidal current patterns (velocities and phases), range, and excursion; ○ Non-tidal circulation patterns, including frequency distributions of current speed, direction, and persistence; ○ Temperature and salinity distribution (horizontal and vertical), including temporal variations; and ○ Monthly river discharge including maximum, average-maximum, average, average-minimum, and minimum discharge and flushing characteristics (only for estuaries). 	Not Applicable, no estuaries or oceans in study area

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		<p>Ground water characteristics:</p> <ul style="list-style-type: none"> • Historical and seasonal trends in ground water elevation or piezometric levels; • Piezometric contour maps, water table contour maps, and hydraulic gradients (historical, if available, and current); • Depth to water table for unconfined aquifer systems; • Flow travel time (ground water velocities); • Soil properties, including permeabilities or transmissivities, storage coefficients or specific yields, total and effective porosities, clay content, and bulk densities; • Interactions among different aquifers; • Historical and current data from site wells (e.g., monitoring, background, corrective action, or other uses); • Hydrostratigraphy of the site, including cross sections and hydrostratigraphic unit descriptions; and • Qualitative description of ground water aquifers, including identification of EPA-designated sole-source aquifers [WWW at <http://www.epa.gov/OGWDW/swp/sumssa.html> (EPA, 2003b)]. 	Section 3.4.2

<p>6.3.5 Ecological Resources</p>	<p>The applicant/licensee should describe species types, spatial and temporal distribution, and abundance, especially as they relate to listed and endangered species and critical habitat.</p>	<ul style="list-style-type: none"> • Map(s): <ul style="list-style-type: none"> ○ - Important terrestrial resources, habitats, and ecosystems; and ○ - Topographic maps of the site; • General ecological description of the regional setting, the site, and transportation corridors; • List and description of important species and their spatial and temporal distributions, including their relative abundance and their life histories, critical life stages, biologically significant activities, seasonal habitat requirements and population fluctuations, food chain, and other interspecific relationships; • List of threatened or endangered species (plants and animals) known to occur, or that could potentially occur, including their seasons of occurrence, estimates of abundance, local flight patterns, and critical habitats; • List of major vegetation layers (e.g., over-story and under-story), their dominant species, and the relative species abundances; • Qualitative estimate of the importance of habitat of threatened, endangered, and other important species relative to the habitat of such species throughout their entire range; • Locations of travel corridors for important terrestrial species and alternate routes for those corridors that could potentially be blocked by use of the site; • List of important ecological systems that are especially vulnerable to change or that contain important species habitats, such as breeding areas (e.g., nesting areas), nursery, feeding, resting, and wintering areas, or other areas of seasonally high concentrations of individuals of important species; • Characterization of the aquatic environment (including biological, hydrological, and chemical) and identification of those factors known to influence distribution and abundance of threatened and endangered aquatic life; • Location and value of the commercial and sport fisheries and the seasonal distribution of harvest by species; • Key aquatic indicator organisms expected to gauge changes in the distribution and abundance of species populations that are particularly vulnerable to impacts from the proposed action; • List of important ecological systems onsite or in the vicinity that are especially vulnerable to change or that contain important species habitats, such as breeding areas (e.g., spawning areas); nursery, feeding, and wintering areas; or other areas of seasonally high concentrations of individuals of important species; • Relative significance of various aquatic habitats in a regional context; • Description of current and reasonable foreseeable conditions that are indicative of ecological stresses including natural and man-made; • Description of the status of ecological succession of biota (i.e., weed, brush, pole, and mature stages); • Description and location of any ecological or biological studies of the site or its environs, including those that are currently in progress; • Information on sightings of endangered or threatened species on the proposed site or in the applicable vicinity (e.g., county, tri-county area, bay area, etc.) [The source of this information should be identified. 	<p>Section 3.5 Figure 3-1, Figure 3-91 through 3-96</p>
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		<p>Example sources may include the State Department of Natural Resources, local chapters of recognized bird-watching groups, documented field studies, and State university/college specialists. The time period in which the information was collected by these sources should be specified (e.g., during the past 5 years of monthly observation outings.);</p> <ul style="list-style-type: none"> • Documentation that the applicant has consulted with the appropriate Federal and State agencies (e.g., as required by the Fish and Wildlife Coordination Act) and affected American Indian tribes; and • Identification of other Federal and State projects within the region that are or could potentially affect the same threatened and endangered species or their habitats. 	

<p>6.3.6 Meteorology, Climatology, and Air Quality</p>	<p>The applicant/licensee should characterize atmospheric transport and diffusion processes at and near the site of the proposed action.</p>	<p>Meteorology and Climatology</p> <ul style="list-style-type: none"> • Description of the general climate of the region (e.g., climatological normals of parameters such as temperature, precipitation, and wind speed/direction); • Discussion of the severe weather phenomena (e.g., tornadoes, hurricanes, thunderstorms, atmospheric stagnation episodes) experienced in the region with expected frequencies of occurrence and measured extremes of parameters such as temperature, precipitation, and wind speed; • Monthly and annual air temperature and dewpoint temperature summaries (including averages, measured extremes, and diurnal range) as near as possible to the site; • Monthly and annual summaries of precipitation, including averages and measured extremes, number of hours with precipitation, and hourly rainfall rate distribution as near as possible to the site; • Description of the local airflow patterns and characteristics, using data collected from the onsite meteorological program or from nearby weather monitoring stations; • Description of the baseline air quality in the region, identifying pollutants which are in non-attainment or maintenance areas and the relationship of the site to these areas; • Monthly and annual wind roses and wind direction persistence summaries at all heights at which data on wind characteristics are applicable centered on the site, if possible; • Hourly averages of wind speed and direction at all heights which wind characteristics are applicable and a summary of atmospheric stability; • Estimated monthly mixing height data, including frequency and duration of inversion conditions and methods used to provide the estimates; and • Topographic data presentation, including a map showing detailed topographic features. • If appropriate meteorological data are not available for the site, applicable data from nearby sources may be used if sufficient justification for offsite data is provided. Information sources for the above information include: <ul style="list-style-type: none"> ○ Onsite meteorological program data; ○ National Weather Service stations, [WWW at <http://www.nws.noaa.gov/> (NOAA, 2003a)]; ○ National Environmental Data Index, (WWW at <http://www.nedi.gov/> (NOAA, 2003b); or ○ National Climatic Data Center, (WWW at <http://www.ncdc.noaa.gov/> (NOAA, 2003c). Baseline Air Quality ○ General description of regional air quality, sources of information include: <ul style="list-style-type: none"> ▪ - EPA Air Quality System [WWW at <http://www.epa.gov/ttn/airs/airsaqs/> (EPA, 2003c)]; and ▪ - EPA Aerometric Information Retrieval System [WWW at <http://www.epa.gov/air/data/index.html> (EPA, 2003d)]; 	<p>Section 3.6</p>
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		<ul style="list-style-type: none"> ○ Table comparing regional air quality parameters to National Ambient Air Quality Standards for the area, if possible; ○ Air pollutants for which there are non-attainment or maintenance areas in the region and a map relating the site to these areas; and ○ <input type="checkbox"/> Local or regional emission inventory. 	
6.3.7 Noise	<p>The applicant/licensee should characterize the noise baseline at and near the site of the proposed action. This section may require input from various sections including, but not limited to, 6.2.1.2, <i>Proposed Action</i>; 6.3.1, <i>Land Use</i>; 6.3.6, <i>Meteorology, Climatology, and Air Quality</i>; 6.3.10 <i>Socioeconomic</i>; and provides input to various sections including, but not limited to, Section 6.4.7, <i>Noise Impacts</i>.</p>	<ul style="list-style-type: none"> • Boundaries of the extent of the noise analysis; • Distribution of people, buildings, roads, and recreational facilities that are vulnerable to noise <p>impacts by the proposed action;</p> <ul style="list-style-type: none"> • Current and historical noise levels at sensitive areas, as identified above, as energy equivalent sound level (L_{eq}) or the day-night average sound level (L_{dn}) reported on the dBA scale; • Topography and land use in the vicinity; • Meteorological conditions in the vicinity; • Applicable sound level standards (from consultation with Federal, State, regional, local, and affected American Indian tribal agencies); and • Point and line sources of noise affecting current noise levels. 	Section 3.7

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<p>6.3.8 Historic and Cultural Resources</p>	<p>The applicant/licensee should identify and describes historic, archaeological, and cultural resources. Resources can include districts, sites, buildings, structures, or objects. This section provides input to various sections including, but not limited to, Section 6.4.8, <i>Historic and Cultural Resources Impacts</i>.</p>	<ul style="list-style-type: none"> • Extent of historical and cultural resource analyses; • Known cultural resources in the area and an overview of the area’s cultural setting; • Archaeological or historical surveys of the proposed site, including the following: <ul style="list-style-type: none"> - Physical extent of the survey (if the entire site was not surveyed, the basis for selecting the area to be surveyed is needed); - Brief description of the survey techniques used and the reason for the selection of the survey techniques used; - Qualifications of the surveyors; and - Findings of the survey in sufficient detail to permit a subsequent independent assessment of the impact of the proposed project on archaeological and historic resources; • List of cultural and historic properties within the proposed actions site or within the area of potential effects [These properties are included in State or local registers or inventories of historic and archaeological resources. Guidance can be found on the US. National Park Service WWW at <http://www.cr.nps.gov/nr/publications> (NPS, 2003)]; • The results of any consultation with Federal, State, local, and affected American Indian tribal agencies; • The comments from any organizations and individuals contacted by the applicant who provided significant information concerning the location and assessment of cultural and historic properties; and • Statement of the significance or importance of each cultural resource potentially affected. 	<p>Section 3.8</p>

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<p>6.3.9 Visual/Scenic Resources</p>	<p>The applicant/licensee should provide information on the aesthetic and scenic quality of the site, which provides input to various sections including, but not limited to, Sections 6.4.9, <i>Visual/Scenic Resources Impacts</i> and 6.4.10, <i>Socioeconomic Impacts</i>.</p>	<ul style="list-style-type: none"> • Boundaries of the viewshed or viewscape of the proposed action; • Photos viewing the proposed site from different directions; • Identification of local residents and/or regular visitors to the area who might be affected by aesthetic impacts; • Information related to the landscape characteristics including open spaces, mountain ranges, ecological environment (e.g., flora, fauna, and ecosystems), bodies of water (e.g., waterfalls, waterways, and oceans), color of soils, recreational areas (e.g., parks wilderness areas), architectural features, aesthetic (e.g., historical, archaeological, cultural, and natural) features that would attract tourists, and uncultivated land; • Location of constructed features including radar towers, transmission towers, and overhead power distribution line and production activities; • Visibility from access roads (i.e., existing natural or constructed barriers, screens or buffers); • Regionally or locally important or high quality views associated with proposed action sites; • Photos and information related to the view of the proposed action from different directions including views from roads, highways, homes, and recreational areas (e.g., forest and wilderness area and campgrounds); • Regulatory information related to land-use zoning requirements of the local community or urban areas, sign ordinances or regulations of the local community or urban area, design guides of the local community or urban area, and buffer-zone (or greenbelt-zone) requirements of the local community or urban area; • Summary of any coordination with appropriate local area community planners and/or urban planners; and • Rating of the aesthetic and scenic quality of the site in accordance with the BLM Visual Resource Inventory and Evaluation System (BLM, 1984, 1986a, 1986b, 2002). 	<p>Section 3.9</p>

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<p>6.3.10 Socioeconomic</p>	<p>The applicant/licensee should describe socioeconomic information. This section provides input to various sections including, but not limited to, Sections 6.4.10, <i>Socioeconomic Impacts</i>; 6.4.11, <i>Environmental Justice</i>; and 6.4.12, <i>Public and Occupational Health Impacts</i>. This section may also be linked to Sections 6.3.1, <i>Land Use</i>, 6.3.9, <i>Visual/Scenic Resources</i>, 6.4.1, <i>Land Use Impacts</i>, and 6.4.9, <i>Visual/Scenic Impacts</i> because of land use questions.</p>	<ul style="list-style-type: none"> • Population characteristics (e.g., ethnic groups, and population density); • Economic trends and characteristics, including employment and income levels; • Housing, health and social services, educational, and transportation resources; • Area's tax structure and distribution; • Summary of any coordination with appropriate local and regional agencies or groups who collect these types of data; • Map identifying places of significant population grouping, such as cities and towns; • Population characteristics (trends) and projections [sources of information include the WWW at <http://www.census.gov> (CB, 2003)] and the bases for population projections; • Areas where minority or low-income populations are disproportionately high (see Environmental Justice instructions in Appendix C); and • Sources of information, assumptions and techniques used to develop information. <p>Current and projected population levels for the life of the facility should be determined. The population trends at the proposed site should be discussed along with historic and projected growth rates for the region. Appropriate governmental and industrial projections should be evaluated. Any unusual programs or developments in the region should be highlighted if they may have an impact on the area population.</p>	<p>Section 3.10</p>
<p>6.3.11 Public and Occupational Health</p>	<p>The applicant/licensee should describe existing public and occupational health issues, as appropriate. This section provides input to various sections including, but not limited to, Section 6.4.12, <i>Public and Occupational Health Impacts</i>.</p>	<ul style="list-style-type: none"> • Major sources and levels of background radiation exposure, including natural and man-made sources; express levels in mSv/yr (mrem/yr); • Current sources and levels of exposure to radioactive materials; • Major sources and levels of chemical exposure; express levels in appropriate units; • Historical exposures to radioactive materials; • Occupational injury rates and occupational fatality rates; and • Summary of health effects studies. 	<p>Section 3.11</p>

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6.3.12 Waste Management	<p>1. The applicant/licensee should describe current waste generation rates and sources for all types of waste. This section provides input to various sections including, but not limited to, Section 6.4.13, <i>Waste Management Impacts</i>. This section may be linked to Sections 6.4.1, <i>Land Use Impacts</i>; 6.4.4, <i>Water Resources Impacts</i>; 6.4.5, <i>Ecological Resources Impacts</i> 6.4.6; <i>Air Quality Impacts</i>; 6.4.12.2.1, <i>Pathway Assessment</i>; and 6.6, <i>Environmental Measurements and Monitoring Programs</i>.</p>	<ul style="list-style-type: none"> • Descriptions of all (i.e., nonradioactive, radioactive, mixed, and hazardous) current waste systems, including quantities, composition, and frequency of waste generation [Effluent discharges do not need to be discussed if previously covered (i.e., air effluents in Air Quality section and liquid effluents in the Water Quality section)]; • Information on current disposal activities including size and location of disposal sites as well as the plans for ultimate treatment and/or restoration of retired disposal sites (other than licensed commercial sites); • Identification of all sources of radioactive liquid, solid, and gaseous waste material within the facility; and • Identification of direct radiation sources stored onsite as solid waste (e.g., independent fuel storage). 	Section 3.12
6.4 Environmental Impacts	<p>Analyze and describe the impacts for each resource described in Section 6.3, <i>Description of the Affected Environment</i>, for the no-action alternative, the proposed action, and each alternative. These impacts (e.g., direct, indirect, and cumulative) should consider normal operational events as well as reasonably foreseeable accidents (e.g., design basis events for 10 CFR 72 licensees, credible consequence events for 10 CFR 70 licensees). When analyzing impacts, resources should be considered separately, and where necessary, in combination (e.g., noise impacts on wildlife, or transportation impacts on land use), as appropriate</p>	<p>Activities (i.e., construction, operation and decommissioning) should be evaluated in sufficient detail to determine the significance of potential impacts and to recommend how these impacts should be treated in the process (e.g., consideration of alternative designs or practices that would mitigate adverse environmental impacts).</p>	Section 4
6.4.1 Land Use Impacts	<p>This section describes the impacts to land use for each alternative.</p>	<ul style="list-style-type: none"> • Land-use impact; • Land-use impacts of any related Federal action that may have cumulatively significant impacts; • Area and location of land that will be disturbed on either a long-term or short-term basis; and • Impacts from institutional controls. 	Section 4.1

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6.4.2 Transportation Impacts	This section describes the impacts to transportation corridors including the effects of transportation of radioactive materials.	<ul style="list-style-type: none"> • Construction of access road or railroad to facility; • Transportation route and mode for conveying construction material to the facility; • Traffic pattern impacts (e.g from any increase in traffic from heavy haul vehicles); • Impacts of construction transportation such as fugitive dust, scenic quality, and noise; • Mitigation measures proposed by applicant; and • Any consultations with Federal, State, and local agencies. • Transportation of Radioactive Material • Transportation mode (i.e., truck, rail, or barge) and routes from originating site to destinations; • Estimated transportation distance from the originating site to the storage site; • Treatment and packaging procedure for radioactive wastes; • Radiological dose for incident-free scenarios to public and workers; and • Impacts of operating transportation on the environment (e.g., fire from equipment sparking). 	Section 4.2
6.4.3 Geology and Soils Impacts	This applicant should summarize known and potential geological impacts, mitigation measures and cumulative effects in this section. The major analysis for this section is usually found in the SER and only needs to be summarized in this section. Examples of geological environmental impacts include soil compaction, soil erosion, subsidence, landslides, and disruption of natural drainage patterns. More likely, geological resources may exert an impact on the proposed action and these effects should be summarized in this section (e.g., seismic or volcanic hazards).		Section 4.3

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<p>6.4.4 Water Resources Impacts</p>	<p>The applicant should consider surface-water and ground water uses that could affect or be affected by the construction and operation of the proposed project. The analysis includes consideration of impacts on such water uses as domestic, municipal, agricultural, industrial, mining, recreation, navigation, and hydroelectric power. The review should be limited to present and known future water uses.</p> <p>Consider impacts on the physical, chemical, and biological water-quality characteristics of ground and surface water. Because water quality and water supply are interdependent, changes in water quality must be considered simultaneously with changes in water supply.</p>	<ul style="list-style-type: none"> • Identification of waters receiving effluents and the expected average and maximum flow rates, physical characteristics (e.g., temperature, sediment load, velocities), and composition of radiological and nonradiological pollutants in these effluents; • Impacts on surface water and ground water quality including comparison of predicted effluent and receiving-water quality with applicable effluent limitations and water-quality standards for both radiological and nonradiological constituents [Include conclusions regarding project compliance with these standards, the physical impacts of consumptive water uses (e.g., ground water depletion) on other water users, and adverse impacts on surface-oriented water users (e.g., fishing, navigation, etc.) resulting from facility activities]; • Identification of hydrological system alterations, including construction of cofferdams and storm sewers; dredging operations; placement of fill material into the water; creation of shoreline 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 activities contributing to sediment runoff (e.g., road construction, clearing and grading, fill or spoil placement); • Identification of hydrological system impacts, onsite and offsite (e.g., water quantity and availability, water flow, and movement patterns), and erosion, deposition, and sediment transport, water drainage characteristics, the flood handling capability of the floodplains, flow and circulation patterns, subsidence resulting from ground water withdrawal, and erosion and sediment transport; • Withdrawals and returns of ground and surface water during all phases; • Identification of impacted ground and surface water users, including descriptions of the site and regional water bodies (including sole-source aquifers) and ground water aquifers (Section 5.3.5, <i>Water Resources</i>), surface-water and ground water sources used, identification and locations of ground water and surface water users and areas that could be impacted, the compatibility of proposed water uses with existing and known water rights and allocations, descriptions of any transfer of water rights (e.g., from irrigation use to facility consumptive use) and the impacts associated with such transfers; • Descriptions of any proposed practices and measures to control impacts to water quality and/or quantity (e.g., 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); and • Identification of predicted cumulative effects on water resources. 	<p>Section 4.4</p>

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<p>6.4.5 Ecological Resources Impacts</p>	<p>This section describes the ecological impacts for the proposed action and each alternative.</p>	<ul style="list-style-type: none"> • Site map showing proposed buildings, land to be cleared, areas to be cleared along stream banks, areas proposed for dredge material, areas to be dredged, and waste disposal areas; • Documentation of Section 7 consultations with the FWS on the impact of the proposed action on endangered and threatened species and critical habitat, as discussed in Section 1.4; • Proposed schedule of activities; • Total area of land to be disturbed; • Area of disturbance for each habitat type, and an estimate of the amount of these habitats that will be destroyed relative to the total amount present in the region; • Maintenance practices such as use of chemical herbicides, roadway maintenance, and mechanical clearing that are anticipated to effect biota; • Area to be used on a short-term basis during construction, and plans for restoration of this land; • Any proposed activities expected to impact communities or habitats that have been defined as rare or unique or that support threatened and endangered species; • Estimate of the potential impacts of elevated construction equipment or structures on species (e.g., birds collisions, nesting); • Tolerances and/or susceptibilities of important biota to physical and chemical pollutants; • Clearing methods, erosion, run-off and siltation control methods (both temporary and permanent), dust suppression methods, and other construction practices for impact control or minimization; • Special maintenance practices used in important habitats (e.g., marshes, natural areas, bogs) including those that result in unique beneficial effects on specific biota; • Wildlife management practices; and • Practices and procedures or alternative designs to minimize adverse impacts. 	<p>Section 4.5</p>

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6.4.6 Air Quality Impacts	This section describes the air quality impacts of the proposed action and each alternative.	<ul style="list-style-type: none"> • Description of gaseous effluents (type, quantity, and origin); • Table comparing effluent concentrations to regional air quality parameters (effluent concentrations should be provided for both short and long term impacts); • Release point characteristics (i.e., elevation above grade, inside vent or stack diameter, physical shape, flow rate, effluent temperature, exit velocity, release frequency, or other appropriate information to allow calculation of transport and diffusion); • Description of gaseous effluent control systems; • Detailed descriptions of the models and assumptions used to determine normalized concentration and/or relative deposition [The meteorological data used in these models should be identified (Section 6.3.6, <i>Meteorology, Climatology, and Air Quality</i>).]; • Normalized concentration and/or relative deposition at points of potential maximum concentration outside the site boundary, at points of maximum individual exposure, and at points within a reasonable area that could be impacted (Section 6.3.6, <i>Meteorology, Climatology, and Air Quality</i>); • Description of visibility impacts; • Description of mitigative measures for air quality impacts; and • Description of cumulative air quality impacts. 	Section 4.6
6.4.7 Noise Impacts		<ul style="list-style-type: none"> • Predicted noise levels (sound contour maps are recommended), reported as energy equivalent sound levels or day-night average sound levels (L_{eq} or L_{dn}) using the dBA scale; • Major point and line sources (for locations described above), including all models, assumptions and input data; • Comparison to appropriate standards or guidelines (EPA, 1974; ASTM, 1996); • Potential impacts to sensitive receptors (i.e., hospitals, schools, residences, wildlife); • Mitigation measures to reduce impacts of noise; and • Description of noise related cumulative impacts. 	Section 4.7

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<p>6.4.8 Historic and Cultural Resources Impacts</p>	<p>This section describes impacts to historic and cultural resources. Adverse effects occur when a proposed action's effect on a cultural resource diminishes the integrity of its location, design, setting, materials, workmanship, feeling or association. Adverse effects include, but are not limited to: (i) physical destruction, damage, or alteration of all or part of the property; (ii) isolation of the property from or alternation of the character of the property's setting when that character contributes to the property's qualification of the <i>National Register</i>; (iii) introduction of visual, audible or atmospheric elements that are out of character with the property or alter its setting; (iv) neglect of a property resulting in its deterioration or destruction; and (v) transfer, lease or sale of the property.</p>	<ul style="list-style-type: none"> • Overlay maps where a base map showing known and potential sites is overlain by maps identifying the nature and extent of the impacts from each alternative [Summary information that does not include site-specific or property-specific data should be included in cases where specific information may lead to vandalism or scavenging.]; • Impacts to historic and cultural resources during construction, operation, or decommissioning; • Indirect impacts (e.g., vandalism on known cultural resource sites in the area of potential effects, visual impact, denial of access) resulting from land-use changes, secondary growth and development, or direct construction activities; • Documentation of SHPO and/or THPO consultations on the impact of the proposed action on significant cultural and historic resources as discussed in Section 1.4; • Reference to SHPO and/or THPO comments on the impact of the proposed project on significant cultural and historic resources as discussed in Section 1.4; • State laws and plans for historic preservation, if needed; • Potential for human remains to occur in the project area and plans for complying with Native American Graves Protection and Repatriation Act regulations in the event of an inadvertent discovery [An inadvertent discovery of such items during construction may necessitate a work stoppage of up to 30 days and consultation under this Act's procedures.]; • Practices and procedures or alternative designs to minimize adverse impacts [Mitigation measures could include: (i) limiting the magnitude of the undertaking; (ii) modifying the undertaking through redesign, reorientation or construction on the proposed action; (iii) repair, rehabilitation, or restoration of an affected historic property as opposed, for instance, to demolition; (iv) preservation and maintenance operations for involved historic properties; <p>(v) documentation (drawings, photos, histories) of building or structures that must be destroyed or substantially altered; (vi) relocation of historic properties; and (vii) salvage of archaeological or architectural information and materials.]; and</p> <ul style="list-style-type: none"> • Description of cumulative impacts on historic and cultural resources. 	<p>Section 4.8</p>

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6.4.9 Visual/Scenic Resources Impacts		<ul style="list-style-type: none"> • Photos of the site with the alternatives superimposed; • Rate the aesthetic and scenic quality of the site in accordance with BLM Visual Resource Management System (BLM, 1984, 1986a, 1986b, 2002); • Significant visual impacts from each alternative, including; <ul style="list-style-type: none"> ○ - Physical facilities that are out of character with overall existing architectural features; ○ - Structures that may partially or completely obstruct views of existing landscape; ○ - Structures that create visual intrusions in the existing landscape character (e.g., radar towers, power lines, etc.); ○ - Structures that may require the removal of natural or built barriers, screens or buffers, thus enabling lower quality views to be seen; ○ - Altering historical, archaeological or cultural properties or the character of the property's setting when that character contributes to the property's significance; and ○ - Structures that create visual audible or atmospheric elements that are out of character with the site or alter its setting; • A determination if the visual impact is compatible or in compliance with regulations, ordinances, and requirements; • Potential mitigation measures; and • Description of cumulative impacts to visual/scenic quality. 	Section 4.9
6.4.10 Socioeconomic Impacts	This section describes socioeconomic impacts such as impacts to housing or schools from an influx of additional workforce.	<ul style="list-style-type: none"> • Impacts to population characteristics (e.g., ethnic groups, and population density); • Impacts to housing, health and social services, educational, and transportation resources; • Impacts to area's tax structure and distribution; • Summary of any coordination with appropriate local and regional agencies or groups who collect these types of data; • Sources of information, assumptions and techniques used to develop information; and • Description of cumulative impacts to socioeconomic resources. 	Section 4.10

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6.4.11 Environmental Justice	<i>The Commission has directed the staff to develop an environmental justice (EJ) policy statement. After the policy statement is completed, necessary updates to the EJ guidance will be incorporated. In the interim, the following draft guidance on environmental justice is being provided.</i>	<ul style="list-style-type: none"> • An assessment (qualitative or quantitative, as appropriate) of the degree to which each minority or low-income population is disproportionately receiving adverse human health or environmental impacts during construction or decommissioning as compared with the entire geographic area [In addition, there should be an assessment comparing the impacts with the larger overall geographic area encompassing all of the alternative sites.]; • An assessment (qualitative or quantitative, as appropriate) of the significance or potential significance of such environmental impacts on each low-income and minority population [Significance is determined by considering the disproportionate exposure, multiple-hazard, and cumulative hazard conditions.]; • An assessment of the degree to which each low-income and minority population is disproportionately receiving any benefits compared with the entire geographic area; • A discussion of any mitigative measures for which credit is being taken to reduce environmental justice concerns; • A brief description of pathways by which any environmental impacts may result in disproportionate environmental impacts to low-income and minority populations; • Description of cumulative impacts to low-income and minority populations; and • <input type="checkbox"/> When alternative sites are being evaluated, the same reviews should be available for each site. 	Section 4.11

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<p>6.4.12 Public and Occupational Health Impacts</p>		<ul style="list-style-type: none"> • Maps, in an appropriate scale, showing the distances from the proposed action to the following points or areas for radial sectors centered on the cardinal compass directions: <ul style="list-style-type: none"> ○ - Nearest site boundary; ○ - Nearest full time resident; ○ - Nearest present drinking water intake (from Sections 6.3.1, <i>Land Use</i>, or 6.3.4, <i>Water Resources</i>); and ○ - Nearest sensitive receptors (e.g., schools and hospitals); • For liquid nonradioactive discharge to water or air, provide the basis for analysis and the following information (Section 6.4.4, <i>Water Impacts</i> and Section 6.4.6, <i>Air Quality Impacts</i>): <ul style="list-style-type: none"> ○ - Transit time to the points of analysis; ○ - Liquid stream discharge rate; and ○ - Dilution factor at the points of analysis; • Physical layout, including the location and orientation of nonradioactive materials that are expected to be present (Section 6.1.2, <i>The Proposed Action</i> and 6.3.12, <i>Waste Management</i>); • Location and characteristics of liquid and gaseous releases (from Sections 6.4.4, <i>Water Resources Impacts</i>, and 6.4.6 <i>Air Quality Impacts</i>); • Measured nonradiological concentrations, airborne and waterborne, at specific locations where environmental monitoring data exist (Section 6.6, <i>Environmental Measurements and Monitoring Programs</i>); • Calculated airborne and waterborne concentrations at specific locations important to exposure calculations where environmental monitoring data are not available, including a description of the methodology; • Calculated exposure to the public or calculated average annual concentration of nonradioactive releases to air and water; including all models, assumptions, and input data in order to determine compliance (e.g, 40 CFR 50, 59, 60, 61, 122, 129, 131, etc.); • Number and principal locations of workers who will be exposed to the sources described above and the total amount of time per year that they will spend at those locations; • Calculated exposure to the workforce including all models, assumptions, and input data in order to determine compliance with 29 CFR 1910; • Description of mitigative measures; and • Description of nonradiological cumulative impacts to public and occupational health. 	<p>Section 4.12</p>

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<p>6.4.12.2 Radiological Impacts</p> <p>6.4.12.2.1 Pathway Assessment</p>		<ul style="list-style-type: none"> • Maps, at an appropriate scale, showing the distances from the proposed action to the following points or areas for radial sectors centered on the cardinal compass directions: <ul style="list-style-type: none"> ○ - Nearest site boundary; ○ - Nearest full time resident; ○ - Location of average member of critical group; ○ - Other important receptors (i.e: milk and meat producing animals, and vegetable gardens) and locations; ○ - Nearest present and known future locations from which an individual can obtain aquatic food and/or drinking water (Sections 6.3.5, <i>Water Resources</i> and 6.3.2, <i>Land Use</i>), transit time from the proposed action, and population served; and ○ - Nearest present and known future areas designated for recreational purposes (Section 6.3.2, <i>Land Use</i>) and transit time from the proposed action; • Potential pathways for releases; • For each radioactive discharge to water or air, provide the basis for analysis and the following information (Sections 6.4.4, <i>Water Resources Impacts</i> and 6.4.5, <i>Air Quality Impacts</i>): <ul style="list-style-type: none"> ○ - Transit time to the points of analysis; ○ - Discharge rate; and ○ - Dilution factor at the points of analysis; • Distributional data for radial sectors centered on the cardinal compass directions for radial distances (immediate area to affected region) including: <ul style="list-style-type: none"> • - Projected population during and after each alternative (Section 6.4.10, <i>Socioeconomic Impacts</i>); • - Current annual meat production, current annual milk production, current annual vegetable production, and current commercial fish and invertebrate catch (Section 6.3.2, <i>Land Use</i>); and • - Affected current and known future drinking water intake locations and the populations served and the daily water consumption at each location (Section 6.3.5, <i>Water Resources</i>); • Crop yield, annual production, growing period, crop type, and amounts consumed and fractional ingestion of contaminated food and water for: <ul style="list-style-type: none"> ○ - Irrigated land using water withdrawn within the affected region of the proposed action, include irrigation rate; and ○ - Land affected by airborne emissions and deposition; • Animal husbandry, facilities, agricultural practices, game harvests, or food processing operations having the potential for contributing incrementally to either individual or population doses. 	<p>Section 4.1, Figure 1-38, Figure 6-1</p>

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<p>6.4.12.2.2 Public and Occupational Exposure</p>		<ul style="list-style-type: none"> • Physical layout of the site, including the location and orientation of radioactive materials that are expected to be present (Section 6.2.1.2, <i>Proposed Action</i>); • Location and characteristics of radiation sources and liquid and gaseous radioactive effluent (Sections 6.4.4, <i>Water Resource Impacts</i>, and 6.4.6 <i>Air Quality Impacts</i>); • Measured radiation dose rates, airborne radioactivity concentrations, and waterborne radioactivity concentrations at specific locations where environmental radiological monitoring data exist; • Calculated radiation dose rates, airborne radioactivity concentrations, and waterborne radioactivity concentrations at specific locations important to dose calculations where environmental radiological monitoring data are not available, including a description of the methodology; • Calculated total effective dose equivalent to an average member of the critical group or calculated average annual concentration of radioactive material in gaseous and liquid effluent; including all models, assumptions, and input data in order to determine compliance with 10 CFR 20 and 40 CFR 190; • Calculated dose to the workforce including all models, assumptions, and input data in order to determine compliance with 10 CFR 20; • Summary of external radiation monitoring and airborne radiation monitoring programs (Section 6.6, <i>Environmental Measurements and Monitoring Programs</i>); • Description of mitigation measures; and • Description of cumulative impacts to public and occupational radiological exposure. For accidents, include: <ul style="list-style-type: none"> □ The list of reasonably foreseeable (i.e., credible) accidents (e.g., design basis events for 10 CFR 72 licenses, credible consequence events for 10 CFR 70 licenses, etc.) identified as having a potential for releases to the environment and the analysis of the dose consequences from these accidents. 	<p>Section 4.12</p>
<p>6.4.13 Waste Management Impacts</p>		<ul style="list-style-type: none"> • Descriptions of the sources, types, quantities, composition of solid, hazardous, radioactive and mixed wastes expected from the proposed action; • Description of proposed waste management systems designed to collect, store, and dispose of all wastes generated by the proposed action; • Anticipated disposal plans for all wastes (i.e., transfer to an offsite waste disposal facility, treatment facility, or storage onsite); • A waste-minimization plan that identifies process changes that can be made to reduce or eliminate waste, including a description of methods to minimize the volume of waste; and • Description of waste management cumulative impacts. 	<p>Section 1.2, Section 1.3, Section 4.13</p>

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6.5 Mitigation Measures	The ER should summarize mitigation measures that could reduce adverse impacts. These mitigation measures should be incorporated in the proposed action and alternatives (40 CFR 1502.14(f) and 1508.20). The anticipated effectiveness of these mitigation measures should be addressed in reducing adverse impacts. Residual impacts or unavoidable adverse impacts which remain after mitigation measures have been applied should be analyzed, as well as any further impacts caused by the mitigation measures themselves. The technical feasibility and the cost-benefit of any potential mitigation measures including costly actions that would yield only minor environmental benefits, should be noted.		Section 5
6.6 Environmental Measurements and Monitoring Programs			Section 6
6.6.1 Radiological Monitoring		<ul style="list-style-type: none"> • Maps or aerial photographs of the site with proposed monitoring and sampling locations clearly identified along with effluent release points; • Principal radiological exposure pathways (Section 6.4.12.2.1, <i>Pathway Assessment</i>); • Location and characteristics of radiation sources and radioactive effluent (liquid and gaseous, from Sections 6.4.4, <i>Water Resource Impacts</i>, and 6.4.6, <i>Air Quality Impacts</i>); • Detailed description of the monitoring program including: <ul style="list-style-type: none"> ○ - Number and location of sample collection points, measuring devices used, and pathway sampled or measured; ○ - Sample size, sample collection frequency, and sampling duration; and ○ - Method and frequency of analysis including lower limits of detection; • Discussion justifying the choice of sample locations, analyses, frequencies, durations, sizes, and lower limits of detection; and • Quality assurance procedures. 	Section 6.1

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6.6.2 Physiochemical Monitoring		<ul style="list-style-type: none"> • Maps or aerial photographs of the site clearly identifying proposed monitoring and sampling locations, effluent release points, and parameter being measured/analyzed; • Chemical parameters (e.g., nitrogen dioxides or particulates from an industrial off-gas discharge unit, chlorides or pH from a wastewater outfall); • Physical parameters (e.g., wind speed and direction, temperature, precipitation, etc.); • Detailed description of the monitoring program including: <ul style="list-style-type: none"> ○ - Number and location of sample collection points, measuring devices used, and pathway sampled or measured; ○ - Sample size, sample collection frequency, and sampling duration; ○ - Method and frequency of analysis including lower limits of detection; ○ - Discussion justifying the choice of sample locations, analyses, frequencies, durations, sizes, and lower limits of detection; ○ - Quality assurance procedures; ○ - Description of action levels and corrective action requirements; ○ - Physical parameters (e.g., air temperature, wind speed, ground water levels, surface water flow rates); and ○ - Map showing detailed topographic features of the site (as modified by the facility), including major structures and the meteorological tower/s (if applicable). 	Section 6

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6.6.3 Ecological Monitoring		<ul style="list-style-type: none"> • Maps showing features of the site and transportation corridors that will be modified, including major ecological communities, important habitats, and sampling stations and monitoring locations; • List and description of the important ecological resources that are likely to be affected; • List of monitoring program elements or parameters including action or reporting levels for each element; • Type, frequency, and duration of observations or samples taken at each location, and appropriate rationale and sampling design; • Statistical validity of any existing or proposed sampling program [For quantitative descriptions of samples collected within each area of interest and each time of interest, descriptive statistics should include: the mean, standard deviation, standard error, and confidence interval for the mean. In each case, the sample size should be clearly indicated. If diversity indices are used to describe a collection of organisms, the specific diversity indices used should be stated. Also, the methods used for observing natural variations of ecological parameters should be described. If these methods involve indicator organisms, the criteria for their selection should be stated.]; • Sampling equipment used; • Method of chemical analyses, as applicable; • Data analysis and reporting procedures; • Documentation of applicant consultations with the FWS, appropriate State agencies (e.g., fish and wildlife agency), and American Indian tribal agencies; and • <input type="checkbox"/> Documentation of the environmental monitoring programs in policy directives designating a person or organizational unit responsible for reviewing the program on an ongoing basis. <p>Procedures should establish criteria for (as applicable):</p> <ul style="list-style-type: none"> • Data recording and storage; • Reporting results to the NRC or consulting agency; and • Actions to be taken for anomalous results or when results do not meet requirements. 	Section 6.2

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6.7 Cost Benefit Analysis	This section describes the costs and benefits for the proposed action and each alternative. NUREG/BR-0058 and NUREG-1530 (NRC, 1995a; 1995b) provide detailed guidance. The discussion of costs and benefits will include both the costs of each alternative and a qualitative discussion of environmental impacts. Provide assumptions and uncertainties in the analyses.	<ul style="list-style-type: none"> • Qualitative discussion of environmental degradation (including air, water, soil, biotic, as well as socioeconomic factors such as noise, traffic congestion, overuse of public works and facilities, and land access restrictions); • Decreased public health and safety; • Capital costs of the proposed action and alternatives, including land and facilities; • Operating and maintenance costs; • Post-operation restoration (not applicable when the alternative is restoration); • Post-operation monitoring requirements; • Other costs of the alternative (e.g., lost tax revenue, decreased recreational value, degradations in transportation corridors, as appropriate); • Qualitative discussion of the environmental benefits; • Increased public health and safety; • Capital benefits of the alternative; • Tax revenues received by local, State, and Federal governments; • Incremental increases in regional productivity; • Enhancement of recreational values; • Creation and improvement of transportation corridors and facilities; and • Other benefits. 	Section 7
6.8 Summary of Environmental Consequences		<ul style="list-style-type: none"> • Unavoidable adverse environmental impacts; • Irreversible and irretrievable commitments of resources used in project construction, operation, and decommissioning; • Short-term and long-term impacts; and • Short-term uses of the environment and the maintenance and enhancement of long-term productivity. 	Section 8