

these LWRs would be essentially the same as those of the existing LWRs discussed in the Existing LWR Alternative. The Bellefonte Nuclear Plant located along the west bank of the Tennessee River in Alabama is used as a representative site for the environmental analysis of this alternative. Two reactor units (such as those at the Bellefonte Nuclear Plant) would be needed to implement this alternative.

Evolutionary Light Water Reactor

The evolutionary LWRs are improved versions of existing commercial LWRs. Two design approaches are considered in the Storage and Disposition PEIS. The first is a large PWR or BWR similar to the size of the existing PWR and BWR. The second is a small PWR approximately one-half the size of the large PWR. Two large or four small evolutionary LWRs would be needed to implement this alternative.

Under each design approach for this alternative, evolutionary LWRs would be built at a DOE site. Therefore, the six candidate sites for long-term storage were used to evaluate the environmental impact of this alternative.

Canadian Deuterium Uranium Reactor

Under the CANDU Reactor Alternative, the MOX fuel containing surplus Pu would be fabricated in a U.S. facility, then transported for use in a commercial heavy water reactor in Canada. The Ontario Hydro Nuclear Bruce-A Generating Station identified by the Canadians is used as a representative site for evaluation of this alternative. This station is located on Lake Huron about 300 km (186 mi) northeast of Detroit, Michigan. Environmental analysis of domestic activities up to the U.S./Canadian border is presented in the PEIS. The use of CANDU reactors would be subject to the policies, regulations, and approval of the Federal and Provincial Canadian Governments. Pursuant to Section 123 of the *Atomic Energy Act*, any export of MOX fuel from the United States to Canada must be made under an agreement for cooperation between the two countries. Spent fuel generated by a CANDU reactor would be accommodated within the Canadian spent fuel program.

S.5 APPROACH TO ENVIRONMENTAL IMPACT ANALYSIS

The environmental impact assessment addresses the full range of natural and human resource, and issue areas pertinent to the sites considered for the long-term storage and disposition alternatives. The resource/issue areas are land resources, site infrastructure, air quality and noise, water resources, geology and soils, biological resources, cultural and paleontological resources, socioeconomics, public and occupational health and safety, waste management, intersite transportation, and environmental justice.

A region of influence (ROI) for each resource/issue area is identified and analyzed for each candidate site for long-term storage and each analysis site for disposition. Land resources address land use; land-use compatibility with existing land-use plans, controls, and policies; and the potential for visual resource impacts. Site infrastructure impacts are assessed by comparing the electrical power, fuel, and transportation network requirements against the existing capacities at each candidate site. Air quality and noise impacts focus on air pollutants and noise emissions and their compliance with the National Ambient Air Quality Standards, State air quality standards, and local government standards for noise.

For water resources, the water consumption requirements of each alternative were compared to the availability of surface and groundwater sources at each site, the potential effects of wastewater discharges on surface and groundwater quality are evaluated, and the site's location relative to floodplains assessed. Similarly, geology and soils are evaluated in terms of site suitability and soil erosion potential. Biological resources are evaluated in terms of the potential for impacts to terrestrial and aquatic resources, wetlands, and threatened and endangered species. Cultural and paleontological resources addresses the potential for disturbance to prehistoric, historic, Native American, and paleontological resources. The employment and income effects of new job creation and the attendant demands on community services and local transportation are analyzed for socioeconomics.