

4.9.1 Impacts from Facility and Infrastructure Improvements

No cultural resource impacts are anticipated for facility and infrastructure improvements. However, earthwork and trenching present a very limited potential to uncover, disturb or destroy resources that are not expected, but could be found in construction areas. Should any evidence of archaeological resources be discovered during construction at the NWTC, the impact would be mitigated by NREL's commitment to stopping the work in the vicinity until a qualified archaeologist can completely evaluate the significance of the find according to criteria established by the National Register.

Option 1 for the natural gas pipeline passes through the 6.5-acre area identified by Labat and Anderson (1995) as having potential for buried archaeological deposits. Based on the recommendations of the Labat and Anderson report, this area should be avoided. If avoidance is not possible, SHPO consultation and systematic testing of the impacted area is recommended prior to ground disturbance to determine if there are any buried archaeological deposits. The level of systematic testing would be determined by the nature of the resource and the potential for impact.

4.9.2 Impacts of the No Action Alternative

Under the No Action Alternative there would be no ground disturbing activities within the area identified by Labat and Anderson (1995) as sensitive for buried cultural resources. All other areas within the NWTC were previously cleared for cultural resources, so any disturbance associated with ongoing operations would be expected to be minor and would be addressed by standard protocol and NREL procedures.

MITIGATION MEASURES

The following measure, an existing NREL commitment, is recommended to address potential impacts of the Proposed Action:

- If natural gas pipeline Option 1 is selected, systematic archaeological testing will be implemented. The testing will occur prior to construction activities and will be approved, as necessary, by the SHPO.

4.10 HAZARDOUS MATERIALS AND WASTES

The Proposed Action is not expected to require new hazardous materials and would require only minor increases in hazardous materials use and waste generation. The NWTC's hazardous waste generator status is expected to remain the same. New facilities and activities are not expected to increase the potential for accident releases or spills. All existing programs, policies and practices associated with hazardous materials and waste would remain in place to apply to future improvements and activities associated with the Proposed Action.

4.10.1 Construction Impacts

Construction activities (tower foundation excavations, on-site utility infrastructure trenching, off-site gas line installation, earthwork, grading, etc.) present the potential to encounter previously

unidentified soils or groundwater contaminated by hazardous materials. Based on field reconnaissance activities conducted by DOE, NREL and Xcel Energy personnel on March 2, 2001 within the proposed natural gas pipeline alignments on and adjacent to the NWTC, the likelihood of encountering contamination is extremely low. If contaminated materials were encountered, standard construction practices and NREL procedures would be applied to avoid related impacts.

4.10.2 Operational Impacts

The Proposed Action would be expected to result in more site activity, which presents the potential to increase the demand for and use of existing hazardous materials and could result in requests for new hazardous materials. Neither of these issues is expected to be significant because:

- the nature of the research to be performed on the site is not going to change substantially;
- chemical manufacturing and processing is not proposed;
- no laboratory wet methods are proposed that would materially increase chemical use, no radiological or other substantial or new risks are anticipated;
- hazardous materials would continue to be handled centrally through NREL and tracked through the chemical inventory system;
- aggressive waste minimization training and implementation would continue to ensure that the amounts of hazardous materials used on-site would be the least possible consistent with research objectives; and
- most importantly, substantial changes would be reviewed by NREL's Risk Assessment Program and stringent management and procedural practices will continue to be implemented at the NWTC.

If new storage tanks are needed for future activities, they would be constructed and managed consistent with state, federal, and NREL tank requirements.

Hazardous waste generation would be expected to increase if the quantities of hazardous materials used increases. However, based on planned improvements and future activities, the amount of hazardous waste generated is not expected to exceed the CESQG criteria limits. It is anticipated that the NWTC would remain a CESQG. NREL's pollution prevention program and other efforts are expected to minimize the amount of hazardous waste generated at the NWTC.

NREL solid, non-hazardous waste quantities have increased only slightly during the past few years due to proactive management and recycling programs. Solid waste levels are expected to increase only slightly and in proportion to increased program activity and higher levels of personnel. The increase in solid waste would not affect current disposal agreements.

4.10.3 Impacts of the No Action Alternative

If the No Action Alternative were implemented, the existing quantities and types of hazardous materials and hazardous wastes associated with the site would remain constant. The possibility of encountering unidentified contaminated materials during construction of new facilities would be reduced relative to the Proposed Action.

MITIGATION MEASURES

There are no significant impacts; therefore no mitigation measures are required under NEPA.

4.11 PUBLIC SERVICES AND UTILITIES

The following discussion addresses the impacts of the Proposed Action on the capacity of infrastructure and service providers. Storm water issues are addressed in Sections 3.6 and 4.6 Water Resources. Broad energy issues are discussed in Sections 3.12 and 4.12 Energy Efficiency and Renewable Energy. Environmental impacts from the construction of new utility infrastructure are discussed throughout Chapter 4, as appropriate.

4.11.1 Electricity and Gas

As described in Chapter 2, the Proposed Action requires and includes a major electrical system upgrade and a natural gas line extension from Highway 93. No significant impacts on the capacity of these systems or the local service providers are anticipated from the Proposed Action.

The demand for electricity and gas by the NWTC is not expected to be substantial with respect to Xcel Energy's overall capacity or local infrastructure. The new demand would not contribute substantially to peak period power demand and associated power generation capacities. However, all additional peak period power demand contributes incrementally toward the cumulative need for new power plants and corresponding environmental impacts. These cumulative impacts would be offset by NREL's commitment to sustainability, which includes purchasing "green" power, extensive on-site energy conservation measures, and the potential energy efficiency and renewable energy technology benefits anticipated from the work performed at the NWTC (see Sections 3.12 and 4.12 for related findings).

4.11.2 Telecommunications

The Proposed Action would improve and extend the on-site telecommunications infrastructure to support new research and development activities, facilities, and an increasing number of employees on the site. No off-site infrastructure requirements are needed and the capacity of local service would not be adversely impacted by the proposed improvements.

4.11.3 Domestic Water System

The Proposed Action would create no significant off-site water infrastructure requirements or significant demands on water sources. The capacity of on-site infrastructure and local service would be adequate with contemplated improvements.

The Proposed Action includes improvements that would upgrade the existing domestic water system to accommodate additional buildings and water use. Water use would be expected to increase as new buildings and facilities are constructed and as additional on-site employees are added. The additional water would be hauled onto the site by more frequent and/or larger capacity truck deliveries. If water delivery trucks hauling the same volume of water per trip continue to serve the site, delivery frequencies would be expected to increase in a manner roughly proportional to facility development and employee growth. The long-term scenario