6.11 Hazards and Hazardous Materials

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This section describes hazardous materials and wildland fire hazards in the vicinity of the Upper North Fork Feather River Hydroelectric Project (UNFFR Project) as well as hazards associated with UNFFR Project operations. Many issues related to hazards and hazardous materials in the UNFFR Project vicinity are addressed in other sections of this chapter (e.g., geologic hazards are in Section 6.3, flood hazards are in Section 6.4, and recreation hazards are in Section 6.8). Included in this section is an analysis of the potential for the operation of UNFFR Project under a new Federal Energy Regulatory Commission (FERC) license to expose the public to impacts associated with hazardous materials, fire hazards, and operational hazards. The following topics are not discussed in this section for the reasons noted:

- **Hazards effects near schools:** No schools occur near the activity areas[1] shown on Figure 4-1.
- **Hazards associated with airports:** No airports occur near the activity areas.

6.11.1 Environmental Setting

The UNFFR Project vicinity is characterized by diverse topography, two large reservoirs, and a picturesque river corridor. On the more than 30,000 acres of land within the UNFFR Project boundary, a variety of potential hazards exist that pose risks to human health and safety. Many of these hazards are naturally occurring (e.g., steep terrain, seismic instability, fire-evolved vegetation, and fast-moving water), while other potential hazards are manmade (e.g., reservoirs, dams, and mountain roads). This section focuses on hazardous materials in the area and potential hazards associated with wildland fires and the operation of the UNFFR Project.

Although access into much of the area is limited by the rugged terrain and seasonal conditions, ample recreational opportunities attract visitors to the Chester and Lake Almanor area year-round. Visitors to Butt Valley reservoir are primarily recreationists, and access is limited to over-the-snow travel in the winter (e.g., snowmobilers and cross-country skiers). Anglers and white-water rafters are the most common users of the more remote Seneca and Belden reaches of the North Fork Feather River, while fishing, boating, picnicking, and camping are popular activities at the area's reservoirs. Permanent residents also reside in developments adjacent to Lake Almanor, including Chester, Prattville, and Canyon dam.

Hazardous Materials

Operation and maintenance of the UNFFR Project facilities involve the use of lubricants and other substances that contain hazardous materials or generate hazardous waste. Polychlorinated biphenyl (PCB), a highly toxic industrial compound once used in electrical transformers, hydraulic fluids, and lubricants, was banned from manufacture in 1977. However, PCB-contaminated mineral oil is still present in some of the UNFFR Project facilities, including the Caribou No. 1 penstock and Caribou No. 2 powerhouse. A rockslide in February 1984 damaged these facilities, resulting in a release of PCB-contaminated mineral oil into the environment. In addition to the hazardous waste in the slide debris, some of the waste was discharged into Belden forebay and the North Fork Feather River. The slide debris was removed from the location of the slide and placed in a confined location above the floodplain of

[1] Activity areas encompass areas surrounding and portions of Lake Almanor and Butt Valley reservoir.

the river to comply with regulatory requirements and prevent further contamination of the water. The State Water Resources Control Board (State Water Board) and the California Department of Fish and Wildlife (formerly known as the California Department of Fish and Game) expressed concerns about the potential adverse effects of residual PCBs on fishery and wildlife resources. In response to these concerns, Pacific Gas and Electric Company (PG&E) expanded cleanup activities to remove all detectable PCBs (Gallavan pers. comm. 1984) from areas that could affect fish and wildlife, and instituted monitoring efforts as part of relicensing studies.

Two state-listed hazardous waste sites occur in Plumas County; both are at the Army Depot in Herlong, California, approximately 50 miles east of Lake Almanor (California Department of Toxic Substances Control 2007). Four hazardous waste sites identified in the United States Environmental Protection Agency's Comprehensive Environmental Response, Compensation and Liability Information System are located near Quincy, approximately 20 miles south of Canyon dam (United States Environmental Protection Agency 2004). These known hazardous waste sites are too far from the UNFFR Project to affect its operations or persons using the recreation facilities associated with the UNFFR Project. No known hazardous waste sites occur in the UNFFR Project boundary.

Wildland Fire Hazards

Mountainous topography and a mosaic of mixed-conifer and montane hardwood coupled with hot, dry summers create high fire danger in the vicinity of the UNFFR Project. Lightning accounts for the majority of the fires in Plumas County—about 60 percent of the total fire ignitions per year (Plumas County Fire Safe Council 2005). Human-caused fires have also been documented in Plumas County and within the boundary of the UNFFR Project, particularly along roadways and near developed areas. Operation of the UNFFR Project facilities also creates a potential for wildland fire hazards because of the generation and transmission of electricity, as well as PG&E's ongoing maintenance and repair activities. While most fires are small (less than 1 acre), the North Fork Feather River watershed has periodically experienced significant large fires. The Storrie Fire in early September 2000, for example, burned more than 46,000 acres in the watershed, including UNFFR Project facilities near the Belden powerhouse.

The Lassen National Forest conducts vegetation thinning projects on its lands to minimize the potential for extreme fires by removing excess fuels. Fuel reduction projects occurred in 2005 in the areas surrounding Prattville and Canyondam, with additional thinning along Highway 89, east of Canyon dam (Callenberger and Lunder 2009). In addition, timber management companies operating on private lands around Lake Almanor and Butt Valley reservoir undertake fuel reduction projects in the general vicinity of UNFFR Project facilities.

Fuel loading in urban interface areas is a hazard that faces many communities throughout California. The density and type of fuel loads in the general vicinity of Prattville create a hazard for surface fires with low fire behavior or passive fires with moderate fire behavior if the fire affects the tree crowns. Currently, surface fuel accumulations and understory vegetation in the vicinity of Canyon dam pose a hazard of moderate to severe fire behavior. Topography, limited access, heavy ladder fuels, and combustible vegetation could lead to extreme fire behavior with active crowning along the Seneca reach (Callenberger and Lunder 2009). Wildfires create hazards for workers, residents, and visitors in the general vicinity of UNFFR Project facilities and for the environment.

Wildland fire, regardless of the cause, can be detrimental to the natural resources in the North Fork Feather River watershed because it can kill vegetation, burn the organic matter in litter and

soil, and form impervious soil layers. These factors contribute directly to accelerated runoff during and immediately after a storm that can carry pollutants and sediment to the river and other waterbodies. Concentrated runoff discharged over a shorter period of time can result in increased flood hazards. Bare soils and increased runoff can also increase the risk of landslides.

Fire protection needs in the UNFFR Project vicinity are currently met by a combination of volunteer fire departments, the California Department of Forestry and Fire Protection (CAL FIRE), and the United States Department of Agriculture, Forest Service (USFS). By law, CAL FIRE is responsible for wildland fire protection on all private lands in Plumas County, and the USFS is responsible for wildland fire protection on all National Forest System lands. Both CAL FIRE and USFS fire stations are staffed only during the summer fire season, which normally lasts from May to October. Most of the USFS-administered lands in the UNFFR Project vicinity are in Urban Wildland Intermix zones, which are areas that need to be managed to reduce the threat, spread, and potential intensity of fire. The community of Prattville is provided additional protection by the Prattville-Almanor Fire Protection District, a primarily volunteer department that provides structural fire protection and rescue services in the Prattville and Canyon dam communities throughout the year.

UNFFR Project Operational Hazards

Because the reservoirs and rivers in the UNFFR Project area are part of a dynamic hydroelectric power system, fluctuating water levels are a common occurrence. The water levels of Lake Almanor fluctuate throughout the year, with smaller fluctuations during the summer. Butt Valley reservoir, Belden forebay, and the Seneca and Belden reaches are subject to dramatic and often sudden (hourly and daily) fluctuations in surface elevations as discharge rates from powerhouses change to accommodate power generation demand. PG&E uses a combination of visual and audio warning systems around its facilities to warn the public of sudden changes in water levels.

6.11.2 Environmental Impacts and Mitigation Measures

Methodology

The impact analysis for hazards and hazardous materials is based on a review of the existing hazards and hazardous materials in the vicinity of the UNFFR Project. Information for the environmental setting was collected from state and federal hazardous materials websites, the Plumas County Fire Safe Council, USFS land and resource management plans, and information from PG&E's relicensing application. The impact analysis qualitatively discusses the potential for Proposed UNFFR Project and the two alternatives to create or expose people to hazards or hazardous materials impacts.

Thresholds of Significance

Impacts associated with hazards and hazardous materials would be significant if the Proposed UNFFR Project, Alternative 1, or Alternative 2 would:

- create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;

- create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment; or

- expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

Impacts and Mitigation Measures

This section discusses the anticipated impacts related to hazards and hazardous materials associated with the Proposed UNFFR Project and either alternative and identifies mitigation measures for significant impacts. Table 6.11-1 compares the final level of significance for each impact (with incorporation of mitigation measures if appropriate).

Table 6.11-1. Summary of Hazards and Hazardous Materials (HM) Impacts

IMPACT	PROPOSED UNFFR PROJECT	ALTERNATIVE 1	ALTERNATIVE 2
Impact HM-1: Construction activities associated with the UNFFR Project could expose people or the environment to hazards associated with the use of hazardous materials.	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Impact HM-2: Implementation of the UNFFR Project could increase the potential for wildfires and expose people to hazards from wildfires.	Less than significant	Less than significant	Less than significant

Impact HM-1: Construction activities associated with the UNFFR Project could expose people or the environment to hazards associated with the use of hazardous materials.

Under the Proposed UNFFR Project and either alternative, construction activities would require the use of potentially hazardous materials (e.g., oil, fuels) to operate vehicles and construction equipment. Hazardous materials spills at the activity areas could pose a hazard to recreationists, workers, or residents in the area and could contaminate soils or water in the vicinity of the spill. For either Alternative 1 or Alternative 2, barges used to transport construction materials (i.e., thermal curtain, bulkheads, anchors, etc.) on Lake Almanor and Butt Valley reservoir could accidentally discharge hazardous materials into the water, affecting water quality and potentially aquatic wildlife. Hazardous materials used during construction would follow applicable regulations and safety procedures. If a spill occurs, it would be quickly contained using a spill containment kit that would be kept onsite at all times. In addition, appropriate management practices would be implemented during construction to minimize the potential for a spill or contamination of soils or water in the activity areas.

Transportation of hazardous materials to the activity areas could also pose a hazard for other travelers and the environment if an accident occurs during transit. The potential for a traffic accident is higher in areas with larger traffic volumes (i.e., on State Routes 70 and 89) and where roads are steep or in poor condition (i.e., local roads near Butt Valley reservoir). In easily accessible areas, such as around Lake Almanor, spills could be quickly contained and cleaned

up to minimize impacts. In less accessible areas, such as around Butt Valley reservoir, spills could require more effort to clean up and may have greater effects on the environment. Compliance with applicable traffic laws, hazardous materials handling and disposal regulations, and safety precautions would reduce the potential for accidents and minimize environmental impacts.

Construction activities have the potential to result in hazardous materials spills, therefore, impacts associated with hazardous materials is considered to be **significant without mitigation.**

Mitigation Measure

Mitigation Measure Water Quality (WQ)-8: Approval of Construction Activities by the State Water Board (Hazardous Materials)

See section 6.5.2. for mitigation measures associated with construction activities for the Proposed UNFFR Project and alternatives.

Significance after Mitigation

Implementation of Mitigation Measure WQ-8 would reduce the impact to a **less than significant** level.

Impact HM-2: Implementation of the UNFFR Project could increase the potential for wildfires and expose people to hazards from wildfires.

Under the Proposed UNFFR Project and either alternative, construction activities would use equipment that could ignite nearby vegetation or construction materials and cause a wildfire, creating a hazard for residents, recreationists, workers, and structures in the vicinity of the activity areas. Operational changes to UNFFR Project facilities would not increase the potential for a fire hazard, but ongoing operations (e.g., generation and transmission of electricity) would continue to create a risk for fires. The fire potential in the Prattville intake vicinity is considered low to moderate due to a sparse understory in the surrounding forest as a result of periodic vegetation thinning to protect recreational, residential, and other uses from wildland fire risks. However, crown fires in the Prattville area have the potential to be severe and result in substantial damage to structures. Surface fuel accumulations and understory vegetation in the vicinity of Canyon dam create a moderate to severe fire potential. Vegetation along the Lake Almanor shore, including around the Prattville intake and at Canyon and Butt Valley dams, is limited to sporadic grasses and herbaceous weeds, which would not likely carry a fire beyond the activity areas. The fire potential in the vicinity of Butt Valley reservoir is considered high due to dense canopy cover and understory vegetation. A wildfire near the Caribou intakes could create a substantial hazard to the surrounding forest and people or structures in the vicinity if the fire spreads.

Construction activities would follow standard construction practices and would have a low potential to cause a wildfire based on the fuel conditions in the activity areas and the nature and location (primarily on the water) of the activities. None of the activities or facilities would increase the potential for or severity of wildfires in the Project area, and would not increase the exposure of the public or nearby structures to fire hazards. Therefore, impacts associated with wildfire hazards would be **less than significant**.