

## NRR-PMDAPEm Resource

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**From:** Logan, Dennis  
**Sent:** Wednesday, September 28, 2011 5:29 PM  
**To:** luke.gauthier@fws.gov  
**Cc:** Imboden, Andy; Doyle, Daniel; Balsam, Briana; Krieg, Rebekah; NRR-PMDA-ECapture Resource  
**Subject:** Revised biological assessment conclusion for bull trout in Columbia Generating Station Section 7 consultation with FWS. NRC Docket 050-00397

Dear Mr. Gauthier:

The NRC staff's August 2011 biological assessment concluded that the continued operation of the Columbia Generating Station (CGS) would have **no effect** on the **bull trout** (*Salvelinus confluentus*). After further consideration, however, the NRC staff has revised its conclusion and now believes that operation of the CGS is **not likely to adversely affect** bull trout. The following discussion summarizes the findings of the biological assessment and presents the justification for the revised conclusion.

### Proposed Action

The NRC's Federal action is the decision whether to renew the CGS operating license for an additional 20 years.

### CGS Water Withdrawal and Discharge Summary

In generating electricity, CGS produces heat, which is transferred to the atmosphere through evaporation using six mechanical draft cooling towers. CGS also routinely discharges a portion of cooling water to the Columbia River. The total water losses are replaced by withdrawal from the Columbia River (replacement water is called make-up water). During normal operating periods, the average makeup-water withdrawal is about 17,000 gpm (1.1 m<sup>3</sup>/s). The plant withdraws water about 300 ft (91 m) from the shoreline through two intake screens that have an outer and inner perforated pipe sleeve to exclude adult fish. The outer sleeve has a 42-in. (107-cm) - diameter sleeve with 3/8-in. (9.5-mm)-diameter holes (composing 40 percent of the surface area). The inner sleeve has a 36-in. (91-cm)-diameter sleeve with 3/4-in. (19-mm)-diameter holes (composing 7 percent of the surface area). For the discharge, the State of Washington authorizes discharge in accordance with the special and general conditions of National Pollutant Discharge Elimination System Permit No. WA-002515-1.

### Assessment of Impacts to Bull Trout

The FWS listed bull trout as threatened throughout their range in 1999. The CGS's action is the Hanford Reach, which lies within the Columbia River Distinct Population segment of bull trout. The FWS considers the Hanford Reach of the mainstem Columbia River to be a potential migratory corridor for bull trout. The Mainstem Upper Columbia River critical habitat unit (CHU) provides connectivity to the Mainstem Lower Columbia River CHUs and to 13 additional CHUs. This critical habitat is the main foraging, migration, and overwintering (FMO) habitat for the Entiat River core area and provides connectivity between several other core areas or critical habitat units. The FWS's Bull Trout Final Critical Habitat Justification indicates that bull trout reside year-round in certain areas of the mainstem of the Columbia River as either sub-adults or adults and that spawning adults may also use the mainstem of the Columbia River for up to 9 months.

Observation of bull trout in the Hanford Reach is rare, and the species may seldom use this migratory corridor. Resource scientists at DOE's Hanford Site have characterized the use of the Hanford Reach by bull trout as transient. The FWS Bull Trout Final Critical Habitat Justification indicated that the accounts of bull trout in the Hanford Reach are "anecdotal" and are "likely individuals moved downstream during the spring freshet." Furthermore, the habitat and water temperatures in the Hanford Reach are not ideal for spawning, and the NRC did not identify any reports of spawning activity by bull trout in the vicinity of the CGS during its review for the proposed CGS license renewal.

The lack of spawning in the Hanford Reach means that there is no potential for young bull trout or bull trout eggs to be entrained or impinged at the CGS site. Furthermore, entrainment studies conducted in 1979–1980

and 1985 did not collect any life stage of bull trout. Impingement studies conducted over the same period did not observe any fish impinged on the intake screens. Healthy adult bull trout that commonly inhabit rivers with water velocities above 4 fps (1.2 m/s) would not be susceptible to impingement with a through-screen velocity of 0.5 fps (15 cm/s).

Regarding the heated effluent, bull trout actively select for cooler water, thus there would be little potential for them to be affected by the thermal or chemical discharge from the CGS plant. The thermal effluent from the blowdown discharge during the spring is a long, narrow plume, comprising approximately one percent of the width of the river, and bull trout would likely avoid it while migrating or foraging.

#### Conclusion

Because the Hanford Reach of the river is neither spawning nor rearing habitat for bull trout and because bull trout are so rare in this area, the NRC staff's biological assessment concluded that the continued operation of CGS would have no effect on the bull trout. After further consideration, however, the NRC staff now believes that because of the age of entrainment and impingement studies and the consideration that lack of bull trout in those samples would not absolutely preclude a take of bull trout in the future, its conclusion should be more protective and conservative. Therefore, the NRC staff revises its conclusion and now believes that operation of the CGS is **not likely to adversely affect** bull trout.

Please contact me if you have any further questions,

Sincerely,

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