



Department of Energy

Washington, DC 20585

August 6, 2007

Mr. Thomas Gimble
Acting Inspector General
U.S. Department of Defense
Office of Inspector General
400 Army Navy Drive
Arlington, VA 22202-4704

Re: Office of Inspector General Case No. I07RR087

Dear Mr. Gimble:

The Office of Inspector General, Department of Energy (DOE), recently received a complaint from Mr. Doug Albright alleging that ongoing mismanagement by the U.S. Army Corps of Engineers (USACE) of their Kaplan turbines has resulted in an unnecessary waste of money by the DOE Bonneville Power Administration (BPA). The USACE has chosen to replace turbines rather than to "tune up" existing ones. The allegation is as follows.

USACE owns 113 Kaplan turbines along the Snake and Columbia Rivers, which generate electricity that USACE sells to BPA. BPA then sells the electricity to commercial and private users in the Pacific Northwest. USACE, however, uses substandard control system equipment on its turbines and has failed to periodically "index test and optimize" each of its turbines. The root cause of the USACE having substandard equipment is its desire to design and build everything itself rather than use proven technology. Ultimately this practice causes lost revenue, negatively impacts fish survivability, and has led to the expenditure of \$90 million for six "fish friendly" turbines; which may or may not decrease the fish mortality rate caused by turbine misalignment. Rather than purchasing the six "fish friendly" turbines, it would have been better and less costly to index test each turbine and then optimize the 3-D cam surface individually using information from the index tests.

Actual index-test data shows that a program of comprehensive index testing and optimizing on the Federal Columbia River Power System (FCRPS) Kaplan turbines would produce a high return on investment, both in terms of increased electrical production and reduced hazards to migratory fish; but of the 113 Kaplan Turbines owned by the USACE, only 20 have been index tested.

The USACE Hydro Design Center (HDC) has adopted a shortcut to reduce workload by grouping turbines of the same type and managing their efficiency performance data and 3-D cam surface data all at once, instead of individually index testing and optimizing all 113 turbines. This compromises each unit's operating efficiency in favor of reducing setup and maintenance workloads. This is like the DOE owning 113 pickup trucks, grouping them by model types, and only tuning up 20 of them but claiming all 113 pickup trucks are optimized



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and operating efficiently. The USACE has deemed the resulting lost revenue and negative impact on fish survivability acceptable as "collateral damage."

We are referring this matter for your review and whatever action you deem appropriate because it appears to fall under the purview of the Department of Defense. Also, we understand that Mr. Albright filed a separate complaint on this topic with your office, which has been forwarded, through the Inspector General (IG) of USACE, [redacted] the USACE IG. We plan no further action on this matter. Please acknowledge receipt of this memorandum by e-mail [redacted] @hq.doe.gov citing the above case file number. If you would like to discuss this matter, please contact [redacted] or me at (202) 586-4109.

Mr. Albright has consented to the use of his name in connection with this matter. This information is the property of the Department of Energy, Office of Inspector General, and should be protected in accordance with the provisions set forth in the Privacy Act, Title 5, U.S.C., §552a.

Sincerely,

[redacted signature]

Office of Inspections and Special Inquiries
Office of Inspector General

cc: Administrator, Bonneville Power Administration