STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

P.O. Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

June 18, 2003

Certified Mail

Ms. Debbie Young
Tacoma Public Utilities
3628 S 35th Street
Tacoma, WA 98411-0007

RE: Supplemental Order in #01SEASR-3367 on Remand from PCHB #02-022, Licensing of the Cowlitz River Hydroelectric Project (FERC Number 2016) located on the Cowlitz River, Lewis County, Washington

Dear Ms. Young:

Enclosed is the referenced Supplemental Order. Pursuant to the Pollution Control Hearings Board (PCHB) remand, the Department of Ecology has completed a limited review of the Section 401 water quality certification issued January 15, 2002, to the City of Tacoma, *dba* Tacoma Power, for the Cowlitz Hydroelectric Project. The review was conducted for the limited purpose of determining whether Ecology has reasonable assurance that the implementation of the Article 303 flood control provisions of the Federal Energy Regulatory Commission (FERC) license for the project will not violate Washington's anti-degradation standard.

As detailed in the order, Ecology has determined that it has the ability under the 401 certification to ensure that instream flows below the Cowlitz Hydroelectric Project are managed to meet water quality standards. There is no apparent conflict between the water quality certification and Article 303 of the FERC license. We conclude that the limitations under Article 303 do not negate reasonable assurance that the project will comply with the state antidegradation policy.

If you have any questions, please contact Jeff Marti, Water Resources Program at (360) 407-6636. The enclosed Order may be appealed by following the procedures described in the Order.

Sincerely,

Kelly Susewind, P.E., P.G.
Southwest Region Manager
Water Quality Program

KS:jr

cc: Brian Faller, Attorney Generals Office
Jonathan Feil, Simburg, Ketter, Sheppard, and Purdy, LLP
Magalie Roman Salas, Federal Energy Regulatory Commission
Jeff Marti, Ecology
Cowlitz Service/Mail List
Pollution Control Hearings Board

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

IN THE MATTER OF GRANTING A WATER QUALITY CERTIFICATION TO City of Tacoma dba Tacoma Power In accordance with 33 U.S.C. 1341 FWPCA § 401, RCW 90.48.260 WAC 173-201A	)))))))	SUPPLEMENTAL ORDER IN #01SEASR-3367 on REMAND FROM PCHB #02-022, licensing of the Cowlitz River Hydroelectric Project (FERC Number 2016) located on the Cowlitz River, Lewis County, Washington

TO: Ms. Debbie Young
Tacoma Public Utilities
3628 S 35th Street
Tacoma, WA 98411-0007

On January 15, 2002, the Department of Ecology (Ecology) issued a Section 401 water quality certification to the City of Tacoma *dba* Tacoma Power for the Cowlitz Hydroelectric Project. The Federal Energy Regulatory Commission (FERC) issued a license for the Cowlitz Project (Project No. 2016) on March 13, 2002. FERC subsequently stayed the license on April 12, 2002, after the water quality certification was appealed by the Friends of the Cowlitz, CPR-Fish and the Cowlitz Tribe. A hearing on the appeal before the Pollution Control Hearings Board was held in June 2002. The PCHB issued a final decision on the appeal on January 24, 2003.

In its order, the Board affirmed the issuance of the certification, but also remanded it to Ecology for "the limited purpose of Ecology reviewing the Article 303 flood control provisions of the license for the project to determine whether it has reasonable assurance the implementation of those provisions will not violate Washington's anti-degradation standard."[1] The purpose of this report is to comply with the Board's remand. In fulfilling this remand, Ecology offered the appellants and Tacoma Power the opportunity to comment on the Board's directive. Tacoma Power submitted comments via an April 15, 2003, letter to Ecology (Copy attached as Attachment C). The appellants also submitted comments (Attachment C). Ecology has considered them although they were untimely.

DISCUSSION

This Order evaluates whether reasonable assurance exists that implementation of the Army Corps of Engineers (ACOE) flood control provisions would not violate the state's water quality antidegradation standards. The state's antidegradation standard is for the general purpose of protecting existing beneficial uses. This standard is provided as Attachment A.

Article 303 of the Cowlitz Project license provides for continued flood control at the Cowlitz Project in cooperation with the ACOE. Article 303 describes Tacoma's obligations with respect to maximum reservoir elevations during the year and limiting discharges such that flows stay below certain levels downstream at Castle Rock, Washington. It is found at Attachment B.

[1] Board decision, p. 69.

In its final order, the Board stated,

> Ecology was aware [Article 303] was proposed for the new license at the time it granted 401 Certification. This article was not part of the Settlement Agreement, but was developed in consultations between Tacoma and the U.S. Army Corps of Engineers. The Army Corps did not take part in the alternative re-licensing process, Settlement Agreement negotiations, or instream flow meetings. The flood rule limits Ecology's ability to require modifications in the flow regime under the provisions of Article 15 ("[i]f monitoring indicates that instream flows or pulsing flows for channel maintenance are inadequate, the Commission and WDOE separately reserve the right to require modifications to the flow regime, either on their own motion or upon request of state or federal resource agencies"), *if* it conflicts with the requirements of Article 303. Ecology did not have reasonable assurance when it granted the 401 Certification that application of flows for flood regulation in the federal license would protect all existing beneficial uses.

Article 15 of the settlement agreement and Article 303 of the FERC license address two related areas of project operation. Article 15 addresses Ecology's authority to require the project to provide instream flow releases that meet water quality standards. Article 303 of the FERC license, on the other hand, is designed to ensure that the project meets flood control objectives developed by the Corps. Instream flow requirements typically define the rate of water a project must discharge to sustain instream uses whereas flood control requirements typically define the maximum reservoir pool elevations during different times of the year and the manner of discharge from a project during times when flood control is needed.

Maximum Turbine Capacity Provision

The appellants have asserted that Article 303 restrictions would limit releases from Mayfield dam to maximum turbine capacity of the Mayfield generation units and therefore require gradual release of water following floods and interfere with Ecology's ability to order higher channel maintenance flows under Article 15. However, we do not believe any of the provisions of Article 303 would significantly limit Ecology's ability to order higher channel maintenance flows or mandate gradual release of water. Paragraph (b) of Article 303 provides:

> The procedure for flood operations will be, to the fullest extent feasible, to regulate the flow at Castle Rock so as not to exceed 70,000 cfs. Except as further set forth herein, discharges from Mossyrock shall not exceed equivalent maximum sustained turbine capacity, and discharges should be adjusted in conjunction with the Mayfield development in an effort not to exceed a flow of 70,000 cfs at Castle Rock.

Initially, it should be observed that this provision applies only during flood operations, and is designed to keep flows at Castle Rock below 70,000 cfs.[2] This provision does not prevent Ecology from ordering higher flow than sustained turbine capacity at other times.[3] Paragraph (c) of Article 303 provides:

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[2] Appellants themselves have advocated that flows be kept below 70,000 cfs or lower if possible.

[3] In clarification of the meaning of this provision, the Corps has stated in writing to Ecology that even during flood events, Tacoma does have the discretion to discharge from Mossyrock at a greater rate than the maximum sustained turbine capacity and remain in compliance with Article 303 as long as flows do not exceed a rate of 70,000 cubic feet per second (cfs) at Castle Rock. March 17, 2003 Letter from Howard B. Jones, P.E., Chief, Engineering and Construction Division, Portland District, Corps of Engineers. The Corps writes, "As long as

> For post-flood evacuation, stored waters in Mossyrock Reservoir above elevation 770 feet shall be evacuated as fast as downstream channel conditions will permit, preferably not to exceed 50,000 cfs at Castle Rock, or at a lesser rate if the evacuation can be accomplished in less than three days. However, should a 50,000 cfs flow at Castle Rock jeopardize the evacuation of the storage space above elevation 770 feet, the regulated flow at Castle Rock may be increased to 70,000 cfs, the scheduled maximum. Stored flood waters at Mossyrock that have to be evacuated below elevation 770 feet shall be made at the equivalent maximum sustained turbine capacity at Mossyrock. In the case of approaching storms or other flood situations, it may be necessary to release more than the equivalent maximum sustained turbine capacity to reach the required flood control pool. The Corp of Engineers will then have the authority to request a higher discharge.

This provision, likewise, does not significantly limit Ecology's ability to require higher channel maintenance flows or mandate gradual release of water. As above, this provision is limited to a short time period, post-flood evacuation. Immediately following flood events, the goal of the Corps is to evacuate the Mossyrock reservoir as quickly as possible so that storage space to accommodate additional flood waters is recovered. The need for this is particularly urgent when the Mossyrock reservoir elevation is above 770' (full pool is 778.5') as, at this elevation, flood storage capacity is significantly diminished. Thus, Tacoma must evacuate the reservoir "as fast as downstream channel conditions will permit" while keeping flows at Castle Rock below 70,000 cfs -- preferably less than 50,000 cfs -- or a lesser flow if the evacuation can be accomplished in less than 3 days.

Once the reservoir is below 770', the Corps flood control provisions give Tacoma more discretion as to the rate of evacuation. The provisions state, at paragraph (c):

> Stored flood waters at Mossyrock that have to be evacuated below elevation 770 feet shall be made at the equivalent maximum sustained turbine capacity at Mossyrock. In the case of approaching storms or other flood situations, it may be necessary to release more than the equivalent maximum sustained turbine capacity to reach the required flood control pool. The Corp of Engineers will then have the authority to request a higher discharge.

A question in interpreting paragraph (c) of Article 303 is whether the phrase, "Stored flood waters at Mossyrock that have to be evacuated below elevation 770 feet shall be made at the equivalent maximum sustained turbine capacity at Mossyrock" means a minimum, exact or maximum allowable rate of discharge. Ecology sought clarification from the Corps on this point[4] and the Corps informed Ecology that, "As long as releases from Mossyrock do not cause the flow at Castle Rock to exceed 70,000 cfs, the Corps would not object to nor advocate outflow greater than the combined turbine capacity at Mossyrock."[5]

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releases from Mossyrock do not cause the flow at Castle Rock to exceed 70,000 cfs, the Corps would not object to nor advocate outflow greater than the combined turbine capacity at Mossyrock."

[4] February 8, 2003, letter from Jeff Marti, Department of Ecology to Michael Posovich, Army Corps of Engineers.

[5] March 17, 2003 Letter from Howard B. Jones

As they have done previously in this appeal, the appellants assert that Article 303 mandates that post floods waters be released at maximum turbine capacity. As noted above, the Corps has clarified that article 303 does not prohibit post-flood evacuation greater than maximum turbine capacity. Further, the Board already has rendered its findings on the merits of this issue, stating that it had received no proof maintaining Tacoma's practice of gradually releasing floodwaters had in fact caused or compounded a flood event or de-watered any redds. The Board also concluded that dropping flows at the faster rate appellants suggest will increase the potential for stranding fish and scouring existing redds.[6]

Further, Article 303 contains no limitation on discharges from Mayfield – the downstream dam – other than to keep flows below 70,000 cfs at Castle Rock. Mayfield Dam, which generally is not operated for flood control purposes, passes not only the inflow from Mossyrock but the flow of the Tilton River and smaller tributaries as well.[7] During flood events, the discharges from Mayfield Dam can and often do significantly exceed the Mossyrock turbine capacity.

Channel Maintenance Of The Channel Below The Confluence Of The Toutle

The appellants have noted that the Corps has determined that the sediment retention structure on the Toutle River has filled to capacity and that aggradation from sediment accumulation on the lower Cowlitz (below the confluence of the Toutle and Cowlitz Rivers) is expected to diminish the level of flood protection at Castle Rock, Lexington, and Kelso by decreasing the capacity of the channel to convey higher flows. A Corps engineering analysis has identified a number of options for further consideration as a means for addressing the expected decrease in flood protection.

The Corps engineering study report states that an evaluation of alternatives will be completed in two phases. Phase 1 will include the analysis of interim engineering alternatives. Phase 2 will include an analysis of permanent engineering alternatives. Flushing flows and the purchase of storage space at Mossyrock are included on a "preliminary list of alternatives that may be considered in Phase 1."[8,9]

The extent to which these options constitute final proposals for action is overstated and mischaracterized by the appellants. No final recommendations will be made until the Corps conducts further evaluation and monitoring, involves other stakeholders and prepares an environmental decision document.[10] Neither the flushing flow nor storage purchase alternatives describe basic information such as quantity of flow releases or volume of storage that would be targeted. The preliminary Phase 1 alternatives have not been incorporated into Article 303, nor are they proposed to be by the Corps.

The limited purpose of the remand is to determine whether Article 303 conflicts with the state's antidegradation policy. Article 303 – which was developed by the Corps for the purpose of flood

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[6] Board Ruling, Paragraph XX

[7] While Mayfield Dam is not operated for flood control purposes, it does provide useable storage of 21,378 acre-feet (p. 4, Final License Application, Cowlitz Hydroelectric Project, December 1999). This storage is capable of providing a one-day pulse flow of about 11,000 cfs that could be used to manage or supplement flows for channel maintenance, pulsing or other downstream purposes if deemed necessary.

[8] April 2002, Army Corps of Engineers, Mount St. Helens Engineering Reanalysis. Hydrologic, Hydraulics, Sedimentation and Risk Analysis. Page 6-2.

[9] May 2, 2003 phone conversation between Jeff Marti, Department of Ecology and John Etzel, Project Manager, Programs & Project Branch, US Army Corps of Engineers, Portland District. The Phase 1 analysis is not proceeding, however, because, as of May 2003, Congress has not provided the Corps the funding to do it.

[10] May 2, 2003 phone conversation between Jeff Marti and John Etzel.

control – does not preclude the Corps itself from pursuing the preliminary interim flood control alternatives it has identified if the Corps eventually determines that such measures should be implemented. Further, as discussed above, no provisions in Article 303 would prevent Ecology from ordering such channel maintenance flows if they were necessary to comply with state water quality standards.

Flow Cap of 70,000 cfs

Appellants have not asserted that flows above 70,000 cfs would be reasonable to provide. Further, given the significant potential damage to existing habitat and property and risk to human life such flows would pose, it is extremely unlikely that such flows would ever be required.

Winter Drawdown

In its Order, the PCHB noted that during the discussions held as part of the Cowlitz Project licensing process, Ecology had requested Tacoma to consider drawing down the reservoir to a wintertime pool level by December 15. However, Ecology's request was in error. What Ecology meant to request Tacoma to consider was to draw down the reservoir to a wintertime pool level by November 15, but Ecology staff erroneously stated December 15. Tacoma understood Ecology's request to mean December 15, however, and responded accordingly.

A December 15, drawdown date may have conflicted with the Corp's recommendations, and Tacoma stated that it would have to get Corps concurrence if the drawdown date were to be delayed. A later drawdown date presents a greater flood risk because less storage capacity would be available to absorb high inflows. A diminished ability to capture higher inflows during early December – a time when winter storms are probable -- would cause Tacoma to spill at a greater rate, creating a greater risk of redd scour. No party is recommending that the drawdown date for Riffe Lake be moved to December 15.

Moving the drawdown date to November 15th, on the other hand, would present no such conflict with the Corp's recommendations. Ecology asked the Corps to confirm this in writing, and the Corps did so stating: "The Corps authority only requires that the reservoir not be higher than [745.5] from December 1 through January 31, unless inflows exceed the combined turbine capacity at Mossyrock and outflow must be decreased to meet flow requirements at Castle Rock. We would not object to nor advocate that Mossyrock be lowered below elevation 745.5, as this elevation meets the projects flood control obligations."[11]

If such earlier drawdown occurred, Tacoma would achieve compliance with the wintertime drawdown pool level that much earlier. Indeed, Article 303 states that, "Beginning October 1, Mossyrock Reservoir shall be gradually lowered from elevation 778.5 feet to reach 745.5 feet on *or before* December 1" (italics added).

Spring Refill

A key biological objective for the Cowlitz River in the springtime is to ensure the out-migration of juvenile anadromous fish. The flood control provisions state that, "between February 15 and June 1 the reservoir may be filled gradually to elevation 778.5 feet." The filling of the reservoir requires storing the higher flows that occur during spring snowmelt, so instream flows are

[11] Ibid.

generally lower than occurred historically. This is why Ecology has conditioned the certification to provide periodic pulsing flows to stimulate juvenile outmigration.

Because Article 303 merely provides that Tacoma Power may – not shall -- fill Riffe Lake reservoir to elevation 778.5', there would be no conflict between it and an Ecology request or order that pulsing flows need to be done more or less frequently, for a longer or shorter duration, or of a greater or lesser magnitude. The consequence of such measures may decrease the probability that Tacoma would actually achieve full refill by June 1 because more water could be allocated to instream flow needs and less would be available for storage. But because such refill is optional in any case, there is no conflict between Article 15 and Article 303 of the license.

CONCLUSION

Under its 401 certification, Ecology has the ability to ensure that instream flows below the Cowlitz Hydroelectric Project are managed to meet water quality standards. There is no apparent conflict between the water quality certification and Article 303 of the FERC license. We conclude that the limitations under Article 303 do not negate reasonable assurance that the project will comply with the state antidegradation policy.

At this time, Ecology is not proposing any modifications to the flow regime it has specified for the Cowlitz River Hydroelectric Project. Ecology and the Board have required continued monitoring of instream flows and their environmental effects. Ecology also will be a participant on the fisheries technical committee for the implementation of the Cowlitz Project license – if and when the License stay is lifted. Finally, Ecology has issued a compliance order to Tacoma Power to address the project's effects on total dissolved gas. To the extent monitoring and new information indicates the need for revision of the instream flow conditions, Ecology will proceed in consultation with members of the fisheries technical committee, other parties, and the public. Ecology also will consult with the Corps as it considers alternatives to protect the level of flood protection on the lower Cowlitz River. Ecology must ensure that any change to the instream regime will meet the water quality standards and support all the designated uses of the Cowlitz River.

Any person aggrieved by this Order may obtain review thereof by appeal. The Applicant can appeal up to 30 days after receipt of the Order, and all others can appeal up to 30 days from the postmarked date of this Order. The appeal must be sent to the Washington Pollution Control Hearings Board, PO Box 40903, Olympia WA 98504-0903. Concurrently, a copy of the appeal must be sent to the Department of Ecology, Water Quality Program, PO Box 47600, Olympia WA 98504-7600. These procedures are consistent with the provisions of Chapter 43.21B RCW and the rules and regulations adopted thereunder.

DATED this 18 day of June, 2003, in Olympia, Washington.

Kelly Susewind, P.E., P.G.
Southwest Region Manager
Water Quality Program

ATTACHMENT A

WAC 173-201A-070 Antidegradation. The antidegradation policy of the state of Washington, as generally guided by chapter 90.48 RCW, Water Pollution Control Act, and chapter 90.54 RCW, Water Resources Act of 1971, is stated as follows: (1) Existing beneficial uses shall be maintained and protected and no further degradation which would interfere with or become injurious to existing beneficial uses shall be allowed. (2) Whenever the natural conditions of said waters are of a lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. (3) Water quality shall be maintained and protected in waters designated as outstanding resource waters in WAC 173-201A-080. (4) Whenever waters are of a higher quality than the criteria assigned for said waters, the existing water quality shall be protected and pollution of said waters which will reduce the existing quality shall not be allowed, except in those instances where: (a) It is clear, after satisfactory public participation and intergovernmental coordination, that overriding considerations of the public interest will be served; (b) All wastes and other materials and substances discharged into said waters shall be provided with all known, available, and reasonable methods of prevention, control, and treatment by new and existing point sources before discharge. All activities which result in the pollution of waters from nonpoint sources shall be provided with all known, available, and reasonable best management practices; and (c) When the lowering of water quality in high quality waters is authorized, the lower water quality shall still be of high enough quality to fully support all existing beneficial uses. (5) Short-term modification of water quality may be permitted as conditioned by WAC 173-201A-110.

ATTACHMENT B

Article 303. The Licensee shall reserve in Mossyrock Reservoir between elevation 778.5 feet and 745.5 feet adequate space to regulate Cowlitz River floods equal to or less than the magnitude of the December 1933 flood to 70,000 cfs or less at Castle Rock, Washington. However, it is recognized that a flow of 70,000 cfs is considered to be bank full conditions at Castle Rock. Unregulated tributary flows downstream from Mossyrock can exceed 70,000 cfs at Castle Rock, and even termination of discharge from Mossyrock will not guarantee that flows at Castle Rock will be 70,000 cfs or less. Maximum scheduled pool levels and flood regulation procedures for Mossyrock Reservoir are prescribed in the following paragraphs:

a) Beginning on October 1, Mossyrock Reservoir shall be gradually lowered from elevation 778.5 feet to reach 745.5 feet on or before December 1. At no time during that two-month period shall the pool be higher than the elevation represented by uniform evacuation of the reservoir, except temporarily when regulating a flood. Between December 1 and January 31, the reservoir shall be maintained at elevation 745.5 feet or below, except when storage space is used to regulate floods. Between February 1 and June 1, the reservoir may be filled gradually to elevation 778.5 feet.

b) The procedure for flood operations will be, to the fullest extent feasible, to regulate the flow at Castle Rock so as not to exceed 70,000 cfs. Except as further set forth herein, discharges from Mossyrock shall not exceed equivalent maximum sustained turbine capacity, and discharges should be adjusted in conjunction with the Mayfield development in an effort not to exceed a flow of 70,000 cfs at Castle Rock. Equivalent maximum sustained turbine capacity at Mossyrock is understood to be the outflow from two turbines each operating at a unit load of 160 MW (320 MW combined load from both turbines). If less than two turbines are operational then additional discharges must be provided by the regulating outlets or spill to provide the equivalent maximum sustained discharge.

c) For post-flood evacuation, stored waters in Mossyrock Reservoir above elevation 770 feet shall be evacuated as fast as downstream channel conditions will permit, preferably not to exceed 50,000 cfs at Castle Rock, or at a lesser rate if the evacuation can be accomplished in less than three days. However, should a 50,000 cfs flow at Castle Rock jeopardize the evacuation of the storage space above elevation 770 feet, the regulated flow at Castle Rock may be increased to 70,000 cfs, the scheduled maximum. Stored flood waters at Mossyrock that have to be evacuated below elevation 770 feet shall be made at the equivalent maximum sustained turbine capacity at Mossyrock. In the case of approaching storms or other flood situations, it may be necessary to release more than the equivalent maximum sustained turbine capacity to reach the required flood control pool. The Corp of Engineers will then have the authority to request a higher discharge.

Adjustments in the operation specified by the criteria in this article may be made subject to prior approval of the authorized representatives of the Licensee and the Corps of Engineers, Department of the Army. The Licensee shall notify the Commission of any such adjustments.

The Licensee shall also provide data to the Corps of Engineers for the regulation of the Mossyrock and Mayfield developments. The Licensee shall consult with the Corps of Engineers for their data needs to assist in project flood control.

ATTACHMENT C

Tacoma Power comments re: Article 303 Limited Remand, Dated April 15, 2003

Jonathan Feil comments for the Appellants re: Remand of Section 401 Certification for Cowlitz River Hydroelectric Project, Dated April 24, 2003

TACOMA POWER

3628 South 35th Street
Tacoma, Washington 98409-3192

TACOMA PUBLIC UTILITIES

April 15, 2003

Mr. Jeffrey J. Marti
Department of Ecology
Water Resources
P.O. Box 47600
Olympia, Washington 98504-7600

Re: Article 303 Limited Remand, Cowlitz River Hydroelectric Project

Dear Mr. Marti:

Tacoma Power, the owner and operator of the Cowlitz River Hydroelectric Project ("Project"), appreciates this opportunity to provide comments on the limited issue remand by the Pollution Control Hearing Board regarding the Department of Ecology's ("Ecology") review of Article 303 of the License recently issued by the Federal Energy Regulatory Commission ("FERC" or "the Commission").

As a starting point, Tacoma commends the Department of Ecology for developing a reasoned and appropriate balance in its Cowlitz Project actions, meeting Washington State water quality standards and advancing the interests of protection and propagation of the fisheries including species listed under the Endangered Species Act. We strongly believe that the actions taken by the Ecology, along with the numerous other parties executing and implementing the Final Settlement Agreement for the Project, fully meet Washington State's water quality standards, including the antidegradation standards. Furthermore, these actions, now embodied in new license articles, also advance the interests of protecting endangered species and meeting the obligation to provide low cost hydropower to the region to the maximum extent possible.

As you know, the Commission has issued a new license for the Project, and has stayed the effectiveness of that license pending a review by the Pollution Control Hearings Board ("Board") of the 401 Certification issued by Ecology for the Project. The Board affirmed the issuance of the 401 Certification Ecology with some additional conditions and further provided a limited remand for the sole purpose of requesting that Ecology determine whether the Department has reasonable assurance that operations of the project pursuant to Article 303 will not violate Washington's antidegradation standards.

It is our firm opinion that such reasonable assurances exist and nothing in Article 303 prevents the Department from ensuring that the operation of the Project pursuant to Article 303 meets Washington's antidegradation standards.

In considering the extent to which Article 303 meets the Washington State antidegradation standards, we believe it is important to note several points. First, the Board has articulated a standard for measuring whether an activity complies with Washington's anti-degradation standard. The Board has found that the purpose of this antidegradation policy is "to provide protection against activities which, even though they may meet specific water quality and sediment standards, may nevertheless have the effect of degrading water or sediment quality to such a degree that other beneficial uses of an affected water body suffer adverse impacts, thereby calling into question the overall sustainability of those uses." *Marine Environmental Consortium v. Ecology*, PCHB 96-257 (1998). Beneficial uses relevant to this Project include the protection and maintenance of fish resources, recreation (primary contact recreation, sport fishing, boating, and aesthetic enjoyment), and production of hydropower. Ecology has ample evidence in the record of this proceeding to support a conclusion that it has reasonable assurance that the operations of the Project pursuant to Article 303 will not result in the degradation of these beneficial uses and is fully consistent with Washington's water quality standards.

We would also like to note that any future flow change that would result in spill events certainly should take into account the fact that such spills would increase the likelihood of exceedances of the total dissolved gas ("TDG") standard. Ecology has issued a compliance order regarding TDG exceedances which was accepted by the Board in this proceeding. If spill events are requested or ordered, with spill flows in excess of the equivalent maximum sustained turbine capacity of the Project, there will be a significantly increased likelihood of TDG exceedances and other potential deleterious affects. Increasing spill events is logically inconsistent with minimizing TDG exceedances.

Also, any future change in flows that may be considered by Ecology, should consider the impacts on the beneficial uses in a year round context. For example, any change in flows or relevant storage that results in high water events may well negatively impact incubation during periods of lower flows. For this reason, Tacoma cautions against any consideration that would view in isolation high flow impacts during periods of operations pursuant to Article 303. Changes in high flow operations are likely to have a significant impact on habitat during subsequent low flow periods and must be considered in the context of the impact of such flows on biological resources and habitat during subsequent periods.

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April 22, 2003

Mr. Jeff Marti
Department of Ecology
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Olympia, WA 98504-7600

Re: **Remand of Section 401 Certification for Cowlitz River Hydroelectric Project**

Dear Mr. Marti:

Friends of the Cowlitz, CPR-Fish, and the Cowlitz Indian Tribe – the appellants in PCHB appeal No. 02-022 – appreciate this opportunity to submit comments concerning the matter remanded to Ecology by the Pollution Control Hearings Board in the above appeal.

A. **Remand Criteria**. In its *Modified Findings of Fact, Conclusions of Law and Order* (Jan. 24, 2003) ("*Final Ruling*"), the Board remanded the Section 401 Certification to Ecology "for the limited purpose of Ecology reviewing the Article 303 flood control provisions of the license for the project to determine whether [Ecology] has reasonable assurance the implementation of those provisions will not violate Washington's anti-degradation standard." *Final Ruling* at 69. The Board noted that: (1) "Ecology did not have reasonable assurance when it granted the 401 Certification that application of flows for flood regulation in the federal license would protect all existing beneficial uses" (*Final Ruling*, Findings of Fact ¶ CVIII at 51) and (2) "Ecology has not made an adequate assessment of the proposed Corps of Engineer's new flood article, to determine whether it conflicts with Washington's anti-degradation standard." *Final Ruling*, Finding of Fact ¶ CXI at 53; Conclusion of Law ¶ XXXII at 67-68.

The question presented on remand presents much the same criteria as Ecology must apply before it issues a certification in the first instance. As the Board described this in the *Final Ruling*: "The state must have reasonable assurance there will be compliance with the water quality laws, before it may issue a Section 401 Certificate. A state, to have reasonable assurance, must have specific knowledge of the potential impacts from the development, and meaningful means of preventing and protecting against the adverse consequences of the development." (Conclusion of Law ¶ III at 54.)

The Board's Final Ruling and earlier ruling on the motions for summary judgment also clarify the legal standards that are relevant to Ecology's task on remand:

1. Ecology has the authority to consider flood flows in its water quality certification. "The anti-degradation provisions of the Clean Water Act and Ecology's regulations are designed to protect beneficial uses. This policy contains no limitation to minimum flows. It may be necessary to limit maximum flows to protect beneficial uses." *Order Granting and Denying Partial Summary Judgment* (June 18, 2002) ¶ XXXII at 19.]

2. The anti-degradation policy does not take as its baseline the altered conditions under the original license terms: "WAC 173-201A-070, which embodies that standard, mandates, in pertinent part: 'Existing beneficial uses shall be maintained and protected and no further degradation which would interfere with or become injurious to existing beneficial uses shall be allowed.' . . . An important goal of this project is to reverse and commence the restoration of native salmon runs, which have suffered major degradation, as a result of the construction and operation of the project. . . . The above-quoted anti-degradation provisions, as applied to this project supports strong efforts to restore the natural conditions on the Cowlitz River." *Final Ruling*, Conclusions of Law ¶ XIII, XIV at 58 - 59. "The Board's additional conditions are designed to give the parties the tools to correct stream flows where necessary to ensure the project does not continue to injure the beneficial uses, in particular native salmon runs, as they existed prior to the [sic] project was constructed." *Order Modifying Decision and Granting Reconsideration* (Jan 24, 2003).

These holdings are in accordance with WAC 173-201A-070(2), which considers the natural streamflow conditions as the baseline for evaluating project impacts: "Whenever the natural conditions of said waters are of a lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria." ("Natural conditions" in turn mean "surface water quality that was present before any human-caused pollution." WAC 173-201A-020.)

B. **Impacts of Article 303 Flood Control Regulation**. Article 303 would regulate the project in essentially the same manner as the prior Article 34 in the original license. The hearing evidence and the Board's findings of fact describe in detail the extent to which those provisions affect beneficial uses of the river below the project. The primary effects are summarized in this section. The Settlement Agreement flow regulations, incorporated in the Section 401 Certification and license, do not address these effects or provide meaningful means of preventing and protecting against their adverse consequences.

1. The alteration in reservoir height under Article 303 significantly alter post-project median outflows measured downstream of Mayfield Dam from natural inflow (as calculated by Tacoma's operations model) during certain times of the year. The variations during spring flows (which are substantially lower under the project) and fall flows (which are higher under the project) are a direct result of the Article 303 requirements:

a. "[D]ue to reservoir refill operations, mean monthly flows in the spring months (April, May, and to a lesser extent June) are significantly lower, up to 50%, than those that occurred historically."

b. "In the fall and winter, as Mossyrock reservoir is drafted for flood control purposes, river flows remain well above corresponding historical levels. The post-project increase in mean monthly flows during the October to February period ranges from 112% to 127%."

c. "Peak one-day maximum streamflows have decreased, on average, by 23% from historical levels (i.e., from 32,700 cfs to 22,900 cfs). Annual peak flows are more likely to occur in mid-winter (December and January) than historically, when the highest flow of the year coincided with spring runoff (April and May). The rate at which lower river flows return to base levels following high flow events during the winter drawdown period has decreased significantly. In most cases, water is stored in Mossyrock reservoir and released at a rate equal to the maximum turbine capacity of the dam. This practice results in higher than normal flows over a prolonged period in the lower Cowlitz River."

d. "Another effect of the dams has been an increase in short-term flow fluctuations. The more frequent up and down pattern of flows reflects project–induced flow fluctuations superimposed on natural flow patterns."

Final Ruling, Findings of Fact ¶ XXVIII, XXX, XXXII, XXXIII, XXXV at 16-18. *See also* Hearing Exhibits A-67 and R-72 (copies enclosed with these comments).

2. Project construction and operation have resulted in alteration of the natural flow regime that had determined and maintained river geomorphology. Many of the alterations are specific results of the changes from natural flows dictated by flood control procedures:

a. "The Cowlitz dams have modified the magnitude, timing, frequency, duration, and rate of change of flows in the lower Cowlitz River. Changes in the hydrologic regime of the Cowlitz River caused by the dam, in conjunction with land use practices in the basin, have altered sediment dynamics, channel-floodplain interactions, water quality, and other physiochemical processes downstream."

b. "Instream complexity in the Cowlitz River has been lost due to operations of the project. . . . Project operations have reduced the channel dominant discharge, reducing the number of days of channel maintenance and gravel transport and increasing flood damage potential. Since construction of the project, there has been a loss of channel complexity, encroachment of vegetation, and impacts to tributary confluences. . . . [T]he project results in the maintenance of the channel in its degraded condition due to project operations. The project has reduced fish habitat and fish survival below the Mayfield Dam. Operations have resulted in a loss of channel complexity that corresponds to a significant decrease in the lag-time of flow changes throughout the lower Cowlitz River."

Final Ruling, Findings of Fact ¶¶ XXVIII, XXIX, XXXVI at 16 - 19.

3. "Tacoma's practice of gradually discharging water following a high runoff event reduces the flood storage capacity of the reservoir for significant periods of time, thereby increasing the risk of flooding in the event of another storm. The license article does not include any provision to define what it means by a 'flood.'" *Final Ruling*, Findings of Fact ¶ CV at 49. Although Ecology's recent correspondence from the Army Corps of Engineers states that the Corps does not interpret the flood control article as preventing outflow greater than the combined turbine capacity at Mossyrock (as long as releases do not cause the flow at Castle Rock to exceed 70,000 cfs), the hearing evidence showed that Tacoma's practice has been to remain within the turbine capacity.

4. Changes in water storage and release regulation at Mossyrock Dam have been recommended as necessary to purge accumulated sediments from the lower Cowlitz River and prevent bed aggradation and flooding. "A recent engineering analysis completed by the U.S. Army Corps of Engineers indicates the sediment retention structure on the Toutle River has filled to capacity. Therefore, the Toutle River can be expected to deliver a considerable volume of sediment to the lower Cowlitz River over the next few decades unless ameliorative steps are taken. To avoid bed aggradation and concomitant flooding, the Corps recommends storing and releasing quantities of water from Mossyrock dam with the goal of purging accumulated sediments from the lower Cowlitz River and potentially 'purchasing' flood storage at Mossyrock Dam." *Final Ruling*, Findings of Fact ¶¶ XL, CIX at 20-21, 52.

The Board's abbreviated findings on this issue should not substitute for full exploration of this engineering analysis with the Corps. Ecology has not attempted to initiate that discussion in its recent correspondence with the Corps, which has been limited to an effort to understand the Corps' interpretation of the flood control article. The amount of sediment delivered by the Toutle River to the lower Cowlitz River over the next several decades will be huge. Most of the sediment will settle out in the lower Cowlitz River because naturally occurring floods that are large enough to transport sediment no longer occur due to flood control at Mossyrock. Model results show an increase in the average bed elevation of the Cowlitz River of between 3 to 5 feet by the year 2015, and 5 to 10 feet by the year 2035. Unless measures are taken to reduce sediment inputs, the risk of flooding (i.e., overtopping the banks and levees) in the lower river will increase significantly because of sedimentation. Actions will need to be taken to increase the level of protection at Castle Rock, Lexington, and Kelso. Flood modeling indicates that high flows, including intentional releases from Mossyrock reservoir, would have the ability to remove some or all of the sediment that will be deposited in the lower river.

Furthermore, according to the report, due to anticipated deposition of sediment in the downstream reaches, the lower Cowlitz River will revert from a sand- and gravel-bed river to a primarily sand-bed river over the next decade, which is bad for salmon. The lower Cowlitz was historically the major spawning/production area in the system for fall chinook.

Essentially, the Corps is saying that the flood control provisions for Mossyrock Dam are inadequate to prevent anticipated flooding caused by increased sedimentation in the lower river.

The remedies proposed by the Corps include modifying storage and water releases from Mossyrock Dam. Ecology should evaluate these remedies in light of instream flows recommended for fish habitat and survival, and the other values affected by instream flows. The Corps report calls for "flushing flows," which are essentially the same as the "flood cap" flows that the appellants called for in their instream flow proposal during relicensing, as a way of moving sediments out of the lower river. It is ironic that the Corps is recommending "purchasing" flood storage and flushing flows, since those could (and should) readily be considered as requirements to protect beneficial uses under the Section 401 Certification.

5. "The flood rule limits Ecology's ability to require modifications in the flow regime under the provisions of [Settlement Agreement] Article 15 . . . , if it conflicts with the requirements of [License] Article 303." *Final Ruling*, Findings of Fact ¶ CVIII at 51. Furthermore, Article 303 will render frequently unworkable the Section 401 Certifications requirements for the October 1 to November 30 timeframe. The Corps flood rule requires releases that are equivalent to full generation at Mossyrock Dam, under some circumstances when operating under flood control and post-flood conditions (without, as mentioned above, defining what it means by a "flood"). This condition undermines the intent of the settlement agreement flows that attempt to keep fish spawning areas inundated – such as the "five-day" flow rule (subsection "3)" in the October 1 - November 20 flow regulation) and Tacoma's "good faith" commitment to maintain flows between 5,000 and 8,000 cfs to protect spawning habitat during November 1 to November 20.

6. The flood rule requires often a simultaneous draw down and high sustained flow through the turbines at Mossyrock Dam. Visual observations reveal that sediment is being hydraulically removed from immediately upstream of the dam under these conditions. However, these effects have not been studied in the relicensing from a water-quality perspective, nor have these effects been modeled relative to the requirements in Article 303. The effects are likely to exacerbate in the future from the natural build-up of sediment behind the dam. This condition should be examined in a reliable study as part of the remand, rather than relying on broad assumptions about reservoir behaviors.

C. **Deficiency of Prior Environmental Study**. Prior studies of the environmental consequences of the flood rule have been limited to a determination that "the project would provide adequate flood control operating under the rule curve agreed to with the Corps." (Final Environmental Impact Statement at 4-84.) Exemplifying this, the FERC treats the Settlement Agreement "minimum flows and operations" and the "flood control rules" as entirely distinct issues (FEIS at 6-3). Furthermore, in responding to EPA comments, FERC staff acknowledged that they did not evaluate alternatives to the flood control article, because "Tacoma would be operating in essentially the same manner as it is currently," and "we would not expect much difference in environmental effects between the two rule curves." (FEIS at A-46; see also PCHB Exhibit A-35, EPA comments.) This is a very different standard than required for the 401 Certification, namely evaluating whether application of flows for flood regulation in the federal license – compared with natural conditions – would protect all existing beneficial uses.

Similarly, Ecology did not previously evaluate the flood control regulation from the perspective of protecting aquatic resources or other beneficial uses, or require Tacoma to do so, because it considered the effects of flood control to be outside its authority. Hence, the Settlement Agreement flow regulations, incorporated in the Section 401 Certification and license, do not address the effects described above or provide meaningful means of preventing and protecting against their adverse consequences.

The Board noted a salient instance of this in the way that Ecology proposed to Tacoma a change in the instream flow conditions shifting the "reservoir refill date" from June 1 to June 15 of each year, and the date by which Tacoma would have to reach wintertime reservoir pool level, at the Riffe Reservoir, from December 1 to November 15. "Appellant Friends of the Cowlitz had urged such a change in the refill date and a change in the draw down period to lower Riffe Reservoir to that level (745.5 feet) by November 15 and to 735 feet by December 1. Tacoma rejected this revision and did not model the operational requirements of such a change, asserting that it 'can not agree to such a revision without the concurrence of the US Army Corps of Engineers,' claiming it would conflict with the proposed license article for flood control (what became Article 303)." Ecology did not study or explore this issue further, nor require Tacoma to supply the operational model. *Final Ruling*, Findings of Fact ¶ CXI at 52-53.

For these reasons, the appellants submit that Ecology cannot rely on the Settlement Agreement and the studies that accompanied it alone to support a conclusion that Article 303 meets Washington antidegradation standards. How can such a conclusion be supported, when Ecology and Tacoma lack even a consistent definition of "flood"? Ecology should therefore undertake or require further study of the flood control article, focusing on the impacts of flood control on downstream flooding, sediment transport, channel geomorphology, and fish passage. ***The study goal would be to identify means of preventing and protecting against the adverse consequences of the flood control article while providing adequate conditions necessary for mitigating the risk or effects of flooding in the affected portion of the Cowlitz River.*** Ecology should also factor Cowlitz Falls and the Toutle sediment problem into the equation, so that a "whole river" solution is obtained, as well as consider ramping rates applicable under the flood control operations.

The studies should further pursue appellants' "storm hydrograph" analysis of how Tacoma maintains extended high but mediated flows following a storm event, instead of being required to mimic the natural response by lowering the river as rapidly as possible following a storm event. The Board noted that "[t]he prolonged, artificially high and comparatively stable flows resulting from this mode of operation creates the potential for salmon to dig redds and complete spawning in higher elevation areas of the streambed (i.e., near the riverbank)." *Final Ruling*, Conclusion of Law ¶20 at 62. Further study is need as to whether maintaining such flows in fact causes or compounds a flood event or de-watering of redds.

As part of these studies, Ecology should research instances where flood control was specifically tied to antidegradation policies and standards in projects. This is an opportunity for

Ecology to follow the Board's requirement for study "of whether and how the IHA/RVA methodology, including other similar methodologies, may supplement existing instream flow setting methodologies, consistent with the goal of restoring declining native anadromous salmonid runs to the Cowlitz River" (Final Ruling, Conclusions of Law¶ XVII at 60). There is abundant relevant material in the studies and databases available online via the Nature Conservancy website at http://www.freshwaters.org (See, e.g., "Flow Restoration Case Studies," at http://www.freshwaters.org/info/eswm/studies/; "Focusing Freshwater Efforts in Specific Locations" at http://www.freshwaters.org/info/specific.shtml, which links to the "Flow Restoration Database," at http://www.freshwaters.org/docs/flow_rest_db.pdf, summarizing case studies around the world of efforts to restore river flow conditions.)

Furthermore, Ecology should take the opportunity not just to ask the Army Corps to clarify the meaning of Article 303, but should address directly with the Army Corps whether it is willing to modify Article 303 given the new information that has become known. As the Board noted, "Ecology was aware this article was proposed for the new license at the time it granted 401 Certification. This article was not part of the Settlement Agreement, but was developed in consultations between Tacoma and the U.S. Army Corps of Engineers. The Army Corps did not take part in the alternative re-licensing process, Settlement Agreement negotiations, or instream flow meetings." *Final Ruling*, Findings of Fact ¶ CVIII at 51. Ecology should initiate and engage in a full discussion with the Army Corps over its engineering analysis study, with the goal of evaluating what should be implemented in the flow regulations under the Section 401 Certification. We do not have a good idea of the rules and constraints the Corps is operating under, just as we do not know how Tacoma actually manages the reservoir to abide by flood control prescriptions.

D. **Recommend Terms and Conditions Following Study**. Without limiting our position that the Section 401 Certification flow regulations do not address the adverse effects of the flood rule's water storage and release, or provide meaningful means of preventing and protecting against these adverse consequences, appellants recommend that any resulting Section 401 Certificate include terms and conditions sufficient to preserve flow levels at all time as necessary to protect the appropriate biological, chemical, and physical integrity of Cowlitz water sources, and should address specifically the following matters:

1. Clarification and Ambiguous Drafting of Article 303. The requirement that Mossyrock be kept at 745.5 ft "unless inflows exceed the combined turbine capacity at Mossyrock and outflow must be decreased to meet flow requirements at Castle Rock" needs clarification. Can Tacoma go above 745.5 ft if only the first condition is met (i.e., inflows > turbine capacity)? Or do both conditions need to be met (i.e., "and" is used in the Boolean sense). The way it is worded implies the latter. However, the overriding need to prevent flooding at Castle Rock would argue that the second criteria, by itself, would allow Tacoma to hold water back. We submit that Tacoma's abiding by the first criteria alone would not, in the Corps' words, "maintain adequate storage space in the reservoir in order to control flood events."

2. Army Corps Engineering Report. Terms and conditions should address the full range of remedial alternatives recommended in the report as near term actions, including:

a. Increased flood storage at Mossyrock Dam, on a temporary basis in order to maintain the authorized levels of protection should emergency action be required.

b. Flushing flows, in conjunction with alternative "a", to release high flows from Mossyrock at a time when the flow on the Toutle River is low. This would help to transport accumulated sediment in the Cowlitz River downstream.

E. **Procedural Requirements.** We understand that Ecology is contemplating issuing an order on remand without a public notice and comment period or a public hearing under RCW 90.22.020. It is the appellants' position that public notice and hearing is required.

First, WAC 173-225-030, in its provisions for public notice and public hearings, applies "[w]henever an application for certification required by section 401 of FWPCA is filed with the Department of Ecology." It does not make exceptions for decisions rendered upon remand order from the Board.

Second, RCW 90.22.020 require a public hearing after publication of notice whenever Ecology establishes water flows or levels for a particular river.[1] The result of Ecology's actions will be to establish or modify the flows or levels of the Cowlitz River.

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[1] "Before the establishment or modification of a water flow or level for any stream or lake or other public water, the department shall hold a public hearing in the county in which the stream, lake, or other public water is located. If it is located in more than one county the department shall determine the location or locations therein and the number of hearings to be conducted. Notice of the hearings shall be given by publication in a newspaper of general circulation in the county or counties in which the stream, lake, or other public waters is located, once a week for two consecutive weeks before the hearing. The notice shall include the following:

(1) The name of each stream, lake, or other water source under consideration;
(2) The place and time of the hearing;
(3) A statement that any person, including any private citizen or public official, may present his or her views either orally or in writing."

If you have any questions regarding these comments, please contact me. We appreciate the efforts made by Ecology in this matter and look forward to working further with you in the processing of this matter on remand.

Very truly yours,

Jonathan I. Feil

Enclosures
cc: Brian Faller - attorney for Ecology
Richard Agnew - attorney for Tacoma
Friends of the Cowlitz
CPR-Fish
Cowlitz Indian Tribe
Cleve Steward