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SUBJECT: Forwards proposed change to NPDES Permit WA-002515-1 re monitoring of residual chlorine in cooling water blowdown.

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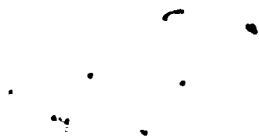
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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

P.O. Box 968 • 3000 George Washington Way • Richland, Washington 99352

April 10, 1989  
Docket No. 50-397  
G02-89-058

U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Mail Station P1-137  
Washington, DC 20555

Subject: NUCLEAR PLANT NO. 2  
OPERATING LICENSE NO. NPF-21  
MODIFICATION OF NPDES PERMIT

Reference: Letter, G. C. Sorensen (Supply System) to C. Eschels  
(EFSEC), dated November 17, 1988.

In the referenced letter (see attached), the Supply System requested the State of Washington for relief from the continuous chlorine monitoring requirement of the WNP-2 NPDES permit. The Energy Facility Site Evaluation Council has agreed to consider this request and will treat it as a formal permit modification. Accordingly, under the requirements of Appendix B, paragraph 3.2 of our operating license, we are providing the NRC with a copy of the proposed change.

Very truly yours,

  
G. C. Sorensen, Manager  
Regulatory Programs

RL/tlr

Attachment

cc: Mr. C. J. Bosted, Resident NRC Inspector (901A)  
Mr. J. B. Martin, Region V NRC  
Mr. N. S. Reynolds, BCP&R  
Mr. R. B. Samworth, NRC  
Mr. D. L. Williams, BPA (399)

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November 17, 1988

Mr. Curtis Eschels, Chairman  
Energy Facility Site Evaluation Council  
Mail Stop PY-11  
Olympia, WA 98504

Dear Mr. Eschels,

Subject: SUPPLY SYSTEM NUCLEAR PLANT NO. 2  
MONITORING OF RESIDUAL CHLORINE IN COOLING WATER BLOWDOWN

Refs: (1) NPDES Permit No. WA-002515-1, Special Condition S1.B  
(2) Ltr., S. Prescott (WDOE) to WL Fitch (EFSEC), dated  
March 6, 1986  
(3) NPDES Permit No. WA-002504-6, Special Condition S1.B

The discharge permit for WNP-2 limits the discharge concentration of total residual chlorine (TRC) to 0.1 mg/l or less (Reference 1). The same permit condition stipulates continuous monitoring but allows grab sample analysis when the continuous monitor malfunctions. The performance of our in-line TRC monitor has been a subject of interest to Council staff and the WDOE inspectors (see for example, Reference 2). While the analyzer will provide a response to a chlorine residual, its accuracy and reliability are not sufficient to verify permit compliance. To assure compliance with the effluent limitation we have always used amperometric titration of grab samples to control the blowdown authorization process. Our use of grab samples is indicated each month on the Discharge Monitoring Report. Though the results from the continuous analyzer are not used, we have continued to expend resources to keep it in service as required by the permit. Based on our experience we do not believe that this maintenance is practicable, nor do we believe it is necessary to assure environmental protection. Accordingly, we seek the Council's permission, by letter of interpretation, resolution, or permit modification, to remove the continuous chlorine analyzer from service and to formalize our current practice.

Chlorination of the cooling water at WNP-2 is an intermittent operation, occurring two or three times per week. The procedure calls for closing the blowdown valve, adding sodium hypochlorite, and then periodically monitoring TRC. When two grab samples taken at least 15 minutes apart both indicate  $TRC \leq 0.1$  mg/l the Shift Manager may authorize resumption of blowdown to the river. Continuous analyzers are not well suited to this operation because: (1) chlorination is intermittent as opposed to continuous; (2) the operation requires a measurement of high sensitivity; (3) the application is one of permit compliance (as opposed to process control); and (4) high suspended solids found in the cooling water necessitate frequent, but largely ineffective, cleaning.

Continuous chlorine analyzers are used in water and wastewater disinfection where they provide feedback to the chlorinator to continuously control free chlorine residuals. The chlorine concentrations typical of wastewater disinfection processes are an order of magnitude higher than concentrations in our effluent. At WNP-2 chlorination is a batch, rather than continuous, process in which the chlorine analyzer is needed for compliance purposes only a few hours per week. It is also significant to note that, through phone conversations with staff at EPA's Environmental Monitoring and Support Laboratory in Cincinnati, we confirmed there is no continuous method approved by the agency for monitoring TRC. (Thus, even if our continuous analyzer was consistently capable of meeting the sensitivity requirement, reliance on it for effluent monitoring might be a technical noncompliance with permit condition G10.) Because confidence is needed at the 0.1 mg/l TRC level, the most suitable method for our application is analysis of grab samples by amperometric titration.

After discussions with staff at EPA, WDOE, instrument vendors, and other nuclear units, we are convinced that grab sample analysis is the most efficient and reliable method currently available. Accordingly, at the next permit renewal "window" (September 1990) we will request the Council's consideration of language it approved for the WNP-1 NPDES permit (Reference 3). In the interim we request the Council's permission to forgo the maintenance on the continuous chlorine monitor and to rely exclusively on grab sample analysis. Please contact W.A. Kiel at SCAN 546-5381 if you require additional information to consider this request.

Very truly yours,

G.C. Sorensen  
Manager, Regulatory Programs

cc: RF Stanley, WDOE

