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FEDERAL ENERGY REGULATORY COMMISSION

Northern States Power Company

100 North Barstow Street
P.O. Box 8
Eau Claire, WI 54702-0008
Telephone (715) 839-2621

November 27, 1996

The Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, D.C. 20426

RE: Hayward Hydroelectric Project, FERC Project No. 2417-007
Filing of Compliance Plans Pursuant to License Articles 401, 407, 410 and 411

Dear Secretary:

Enclosed for filing are an original and eight copies of the four above referenced compliance plans that were developed pursuant to the license for the Hayward Project, dated September 1, 1995, and the order on rehearing dated May 1, 1996. Comments were sought from local and regional resource agencies on draft versions of the plans as documented by correspondence attached to each plan. The agencies' recommendations have been fully considered, and where appropriate, incorporated into these final plans.

We want to point-out that three additional plans (for Articles 403, 404 and 406) that were to be filed by December 1, 1996 will be forwarded to your office for filing in about two-weeks. Licensee decided to hold these plans until consultation is complete with the Wisconsin Department of Natural Resources (WDNR). As indicated in the attached November 26, 1997 letter from the WDNR's Mr. Jeff Scheirer, they have not completed their review of the three draft plans that we forwarded to them in October but they do intend to respond shortly. NSP will incorporate the WDNR's comments into the draft plans as soon as they are received and immediately file them with your office. If we have not received the WDNR's comments by December 13, 1996, we will file the draft plans and consider them final.

Should there be any questions about this filing, please direct them to me or Mr. Rob Olson of my staff. Our telephone numbers are 715/839-2692 and 715/839-1353, respectively.

Very truly yours,

Lloyd Everhart

Lloyd Everhart, Administrator
Hydro Licensing

c: J. Scheirer, WDNR
A. Anderson, NPS
J. Smith, USFWS

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State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary
William H. Smith, District Director

Park Falls Area Headquarters
875 S. 4th Ave., PO Box 220
Park Falls, WI 54552
TELEPHONE 715-762-3204
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November 26, 1996

Mr. Lloyd Everhart
Northern States Power Company
100 North Barstow Street
P. O. Box 8
Eau Claire, WI 54702-008

Dear Mr. Everhart:

This is to inform you that we do intend to comment on the two draft compliance plans which Northern States Power developed pursuant to Articles 403, 404, and 406 of the new license for the Hayward Hydro Project (#2417). Due to the high volume of recent licensing consultations, we were unable to complete our review in the timeframe you requested. Within the last 30 days, NSP alone submitted 10 compliance plans covering 11 license articles at three hydro projects. That workload combined with licensing consultations for other projects prevented us from finishing an adequate review of all your plans. We recognize that NSP must meet the filing deadlines prescribed in the license. You can expect our comments within the next two weeks. In the meantime, please include this letter with the plans that you submit to the Commission. We would be happy to file our comments on these draft plans directly to the Secretary, but we assume that NSP would want an opportunity to address our comments beforehand.

Over the next few years, NSP and the Department will be involved in developing numerous compliance plans for hydro project on several Wisconsin river systems. With this in mind, we would like to suggest an alternative approach to post-licensing consultations which we believe would be more productive and more consistent with the intent of the Commission's orders. The language in most of the license articles which require plans states: "The licensee shall prepare the aforementioned plan after consultation with the resource agencies." Many license articles of this type give licensees at least 180 days, often with extensions granted, to prepare the plans. Presumably, the Commission wanted to give the licensee and the resource agencies the latitude to work out the details of an agreeable arrangement which would accomplish the objectives of the license article. For many of the compliance plans we have dealt with to date, the first contact between our organizations in post-licensing consultation has been the submittal of the draft plan for our review. Typically, about 30 to 35 days before the licensee's filing deadline, we receive the draft plan(s) along with a cover letter requesting our review and comment. If there are any outstanding issues that need to be resolved further after we provide our comments on the draft plan, we encourage licensees to consult with the Department again before filing the plan with the Commission. Usually at that point, however, there is insufficient time for additional discussion before the deadline expires. We consider many of the issues at stake here important enough to warrant more than a single exchange between us.

While this method of consultation may work adequately for some of the straight-forward resource concerns, it has not been effective for others. We would like to improve the efficiency of this follow-up dialogue by beginning an exchange earlier in the process. As an alternative, we suggest that NSP initiate these discussions

shortly after the Commission issues its license order or its order on rehearing. Depending on the nature of the license article, a meeting or teleconference should be scheduled to lay out the basic concepts and components of the plan. Another visit to the project could be helpful to review the specifics at the site, if necessary. In some cases, this initial step would be brief and simple because most of the details have already been decided through earlier consultations. The details of the plan would be developed and finalized through further discussions as needed. Ideally, our formal written comments on the draft plan would be a simple endorsement. As the list of approved compliance plans grows, similar issues at other projects could be handled with less consultation.

The consultations required by the Commission's final license orders are probably the most significant in the long and tedious relicensing process. Many of the issues covered in these compliance plans have long-lasting consequences that will be scrutinized continually over the entire license term. Consequently, we view these plans as the culmination of the collective effort that went into relicensing the hydro projects. Since this opportunity represents the last official chance to resolve potential conflicts between resource protection and electrical generation for the next 30 years, the compliance plans should receive the attention they deserve.

We hope that you are receptive to trying a different approach to post-licensing consultations, and we would like to hear your reaction to this proposal. You can reach me at (715) 762-3204, extension 131.

Sincerely,

Jeff Scheirer

Jeff Scheirer
Northwest District FERC Project Manager

COMPLIANCE PLAN FOR MANAGING FLY ASH/CINDERS

ARTICLE 401

HAYWARD LICENSE (FERC PROJECT NO. 2417)

PLAN TO COMPLY WITH ARTICLE 401 OF THE HAYWARD LICENSE (FERC PROJECT NO. 2417)
FLY ASH/CINDERS MONITORING PLAN

The Director's Order:

Article 401: At least 180 days from the date of issuance of this license (an extension was granted until December 1, 1996), the licensee shall file with the Commission, for approval, a plan to monitor the fly ash/cinders used during the "cindering" process for sealing the stop-logs after replacement.

1.0 Introduction

The licensee along with other hydro owners around the country and the State of Wisconsin utilize cinders as a means of sealing spillway gates to prevent leakage. Cindering is used to reduce the amount of water lost that could be used for generation and is vitally important during the wintertime as leakage through the wooden stoplog section can result in ice damage. Ice accumulation on the wooden stoplogs may also prevent opening during emergency high flow conditions during the wintertime. The cindering process involves "dumping" a shovel-full of cinders on the upstream side of the stop logs. The cinders float downstream into the stop logs and fill in the small cracks and crevices in the boards, essentially creating a watertight seal. Over a period of time, the watertight seal becomes stronger as biological growth accumulates on the stop logs.

The cinders that the Applicant uses for "cindering" at the Hayward project originated from a single source. The licensee obtained and stockpiled a quantity of cinders (several years' supply) from a local industrial facility that is now retired (Uniroyal-Goodrich Tire Plant in Eau Claire, WI). An analysis of the cinders was conducted in August 1992 for a variety of metals and other possible hazardous elements and compounds. The results of that analysis are included in *Attachment A*. The analysis indicated that trace metals concentrations are low and some are below the range of naturally occurring metals found in soils. The results overall indicate the ash used to cinder the gates is relatively inert and environmentally harmless. The results of the 1992 analysis were forwarded to the Wisconsin Department of Natural Resources' (WDNR) Bureau of Solid Waste staff in Madison for review. The licensee has not received a response back from the WDNR.

2.0 Trace Metals and Other Elements to be Analyzed

The WDNR requested in their September 3, 1993 Comments and Recommendations for Terms and Conditions (Page 4, Number 10) that the

analysis of cinders should include an evaluation of the following metals: Arsenic, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, zinc and any other substances that may be associated with a particular source of ash.

The cinder analysis that the licensee performed in 1992 included all of the metals on the WDNR's recommended list (with the exception of copper and nickel) as well as several other elements of concern which included barium, selenium, silver, aluminum, antimony, chlorine, fluorine, sodium, calcium, potassium and sulfur. All of the parameters that are to be analyzed pursuant to this plan are in *Attachment A*, including copper and nickel. This listing should be adequate to the WDNR and other resource agencies.

3.0 Analysis of the Fly Ash/Cinders Prior to Use

The licensee will duplicate the 1992 analysis (including copper and nickel) after plan approval. Three separate samples will be taken from the main cinder stockpile and combined into a composite sample. The composite sample will be sent to the licensee's chemistry lab in Minneapolis, which is certified by the State of Wisconsin. The results of the analysis will be forwarded to the resource agencies for review. The licensee feels it is unnecessary to sample each pile of cinders at each project site each year because the cinders originated from only one source and from one main stockpile.

The licensee's calculations indicate that the present supply of cinders will last another two to three years. In the meantime, the licensee will need to find a new source of cinders. If a new source of cinders is found, the licensee will reanalyze the cinders, as described above, to determine the composition of the material. The results will be forwarded to the WDNR, the National Park Service (NPS) and other resource agencies for review prior to being used for gate cindering. Licensee will follow this procedure throughout the term of the license any time that cinders are procured from a new source.

4.0 Submission of Testing Results

The results of the analysis and any follow-up analysis will be forwarded to the WDNR, the U.S. Fish and Wildlife Service (USFWS) and the NPS.

5.0 Enhancement Measures

The licensee does not propose any enhancement measures for the cinders monitoring plan because the existing analytical results indicate that contaminants are not being introduced into the Namekagon River. If the licensee detects any contaminants in concentrations that are known to be environmentally harmful, the subject cinders will not be used for gate cindering;

instead, either an alternative supply of cinders will be located or an alternative to cindering will be evaluated.

6.0 Agency Correspondence.

This plan was forwarded to the WDNR and other resource agencies for their review and comment. Their comments and recommendations are included in *Attachment B*. The WDNR deferred their comments on the monitoring plan until a thorough analysis can be made by several of their management programs. They felt that it was necessary to take additional time now to arrive at a consistent approach to cindering at all dams in Wisconsin prior to commenting on the monitoring plan. They expect that a consistent approach will be developed by the end of January, 1997. Additional comments from the WDNR and the licensee's response to those comments will be submitted to FERC at a later date.

ATTACHMENT A

RESULTS OF THE 1992 FLY ASH/CINDERS ANALYSIS

TABLE 1 Uniroyal Cinder 1312 leach

Lab No.		197.16
Date Sampled		Jun-92
Sample Type		Uniroyal
		Cinders
		1312 Leach
	METHODS	
Arsenic, mg/L As	EPA 206.2	0.068
Barium,mg/L Ba	DC PLASMA	0.1
Cadmium, mg/L Cd	EPA 213.2	<0.001
Chromium,mg/L Cr	EPA 218.2	<0.005
Lead, mg/L Pb	EPA 239.2	<0.005
Mercury,mg/L Hg	EPA 245.1	<0.001
Selenium, mg/L Se	EPA 270.2	0.010
Silver, mg/L Ag	DC PLASMA	<0.01
Aluminum, mg/L Al	DC PLASMA	1.21
Chloride, mg/L Cl	EPA 325.2	<1
Fluoride, mg/L F	ELECTRODE	<0.1
Sodium, mg/L Na	DC PLASMA	0.8
Zinc, mg/L Zn	DC PLASMA	0.01
Antimony, mg/L Sb	DC PLASMA	<0.1
Calcium, mg/L Ca	DC PLASMA	14.0
Iron, mg/L Fe	DC PLASMA	<0.1
Manganese, mg/L Mn	DC PLASMA	<0.01
Potassium, mg/L K	DC PLASMA	0.2
Sulfate, mg/L SO4	DC PLASMA	3
TOC, mg/L C	EPA 415.1	0.6
pH	EPA 150.1	10.7
Alkalinity, mg/L CaCO3	EPA 310.1	41
Conductance, umhos/cm @25	EPA 120.1	128
Total Hardness, mg/L CaCO3	CALCULATED	36
COD, mg/L O2	HACH VIALS	<5
Total Dissolved Solids, mg/L	EPA 160.1	50

TABLE 2 Uniroyal Cinders Bulk

Lab No.		197.17
Date Sampled		Jun-92
Sample Type		Uniroyal
		Cinders
	METHODS	
Arsenic, mg/Kg As	EPA 206.2	5.1
Barium,mg/Kg Ba	DC PLASMA	30
Cadmium, mg/Kg Cd	DC PLASMA	0.06
Chromium,mg/Kg Cr	DC PLASMA	10.5
Lead, mg/Kg Pb	DC PLASMA	3.8
Mercury, mg/Kg Hg	EPA 245.5	0.015
Selenium, mg/Kg Se	EPA 270.2	0.5
Silver, mg/Kg Ag	DC PLASMA	<0.3
Aluminum, mg/Kg Al	DC PLASMA	1100
Chlorine, mg/Kg Cl	DIONEX	210
Fluorine, mg/Kg F	DIONEX	10
Sodium, mg/Kg Na	DC PLASMA	92
Zinc, mg/Kg Zn	DC PLASMA	98
Antimony, mg/Kg Sb	DC PLASMA	<5
Calcium, mg/Kg Ca	DC PLASMA	740
Iron, mg/Kg Fe	DC PLASMA	4540
Manganese, mg/Kg Mn	DC PLASMA	31
Potassium, mg/Kg K	DC PLASMA	130
Sulfur, mg/Kg S	LECO SC132	2100
Total Carbon, mg/Kg C	LECO CHN 600	145000

ATTACHMENT B

AGENCY CORRESPONDENCE

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary
William H. Smith, District Director

Park Falls Area Headquarters
875 S. 4th Ave., PO Box 220
Park Falls, WI 54552
TELEPHONE 715-762-3204
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November 21, 1996

Mr. Lloyd Everhart
Northern States Power Company
100 North Barstow Street
P. O. Box 8
Eau Claire, WI 54702-008

Dear Mr. Everhart:

The Department must defer its comments on the monitoring plan which Northern States Power developed for continuing its use of cinders to seal leaking spillway discharges at the Hayward and White River hydro projects. Because a thorough review of this plan involves multiple programs within the Department, we will not be able to finalize our recommendations within the 30-day period you provided.

Cindering is a widespread practice used to control leakage through spillgates and stoplogs of many dams in Wisconsin. As you explained in the draft plan, the procedure reduces generational losses at hydroelectric projects and prevents structural damage and operational problems caused by ice buildup at many other Wisconsin dams in winter. Cindering is also used in some temporary installments, such as coffer dams and sheetpiling, to prevent seepage into dewatered areas. Rather than deal with cindering at White River and Hayward as isolated instances, the Department has decided to first address this use on a broader scale to ensure equitable consideration when we make similar determinations on a case by case basis throughout the state.

It may be useful to briefly outline our concerns so that you and the Commission staff will better understand the need to continue these particular consultations. The basic question before us is whether or not introducing cinders into a waterway will adversely affect surface water resources. We must also decide if the beneficial uses outweigh the potential for environmental harm. While these questions seem relatively straightforward, providing answers becomes complicated by our diverse regulatory responsibilities. Cinders and fly ash are defined in the statutes as regulated substances under the solid waste management rules of Chapter 144. There are uncertainties about the quantity of cinders used for this purpose, which we expect would vary from site to site and year to year. To answer these questions we may need some additional information from NSP and other dam operators. Technically, gate cindering could be considered a discharge to the waterway, and the practice may be regarded as placing fill on the stream bed. Special water quality standards apply to streams, such as the Namekagon and White Rivers, which have been designated as Exceptional Resource Waters, Outstanding Resource Waters, or National Scenic Riverways. In any case, the Department would have to issue some sort of approval in the form of a permit or exemption, if we determine that continued use of cinders is allowed. Consequently, our staff in several bureaus are presently examining the practice of cindering to find whether this procedure is consistent with applicable rules.

We regret any inconvenience which may stem from this delay. We suggest you file the draft plan with the Commission on schedule and attach this letter to indicate that agency consultation on cindering is incomplete

and that the Department's comments and recommendations will be provided soon. Our goal is to resolve this issue before the end of January, 1997. We are confident that NSP and the Commission will recognize the value of extending these consultations for a short time in favor of fair and consistent treatment to all entities who employ this method to control leakage at permanent and temporary water control structures.

Please contact me with any questions or concerns you may have about this matter. If you prefer that we submit our final comments directly to the Commission's Secretary, we would be happy to do so. You can reach me at (715) 762-3204, extension 131.

Sincerely,

Jeff Scheirer

Jeff Scheirer
Northwest District FERC Project Manager

United States Department of the Interior

NATIONAL PARK SERVICE
St. Croix National Scenic Riverway
401 Hamilton Street
P.O. Box 708
St. Croix Falls, Wisconsin 54024-0708

IN REPLY REFER TO:

November 20, 1996

L7425(SACN)

Mr. Lloyd Everhart, Administrator
Hydro Licensing
Northern States Power Company
Post Office Box 8
Eau Claire, Wisconsin 54702-0008

Dear Lloyd:

Thank you for sending us the draft compliance/remediation plans for the Hayward Hydro Project. Unfortunately, due to time constraints, we have not had an opportunity to review them in detail. Randy Ferrin, our staff aquatic resource management specialist, was able to briefly scan the plans and submit some comments. Overall, we concur with the plans and feel the best approach, from our perspective, is to work closely with Northern States Power Company (NSP) and Wisconsin Department of Natural Resources (WDNR) as the plans are finalized and implemented.

Article 401: Fly ash/cinder monitoring plan

We concur with this plan. Please indicate how the fly ash/cinders are applied to the gates. Please insure that the Park Service receives a copy of the results from any analyses done on the fly ash/cinders prior to deployment. An editorial note on page two, section 5.0: delete reference to White River and insert Namekagon River.

Article 403 and 404: Flow monitoring compliance and plan to minimize periods without flow downstream from the Hayward Hydro Project

We basically concur with this plan, but offer the following comments: On page three of the plan, reference is made in the first full paragraph, last sentence, to an operator's daily log. We understand the dam is visited daily by the Trego Dam operator, who works five days a week. How will compliance be insured on the other two days per week? The last paragraph of section 6.0 on page four discusses the possibility of local responders dealing with problems at the dam. We urge that you enact this scenario to provide timely response to problems at the dam.

Article 406: Remediation plan to restore, stabilize, and maintain the Namekagon River channel and shoreline downstream from the Hayward Project spillway

We basically concur with this plan with the following comments: On page four of the plan, section 3.4, we recommend the backhoe used for the project be a tracked vehicle such as an excavator to minimize bottom disturbance from the equipment itself. On page six, top of the page: we recommend that Wilderness Inquiry be consulted on providing suitable handicapped access for the canoe portage, and we differ our recommendation to them.

Article 407: Fish barrier net compliance plan

We differ to WDNR for any comments or suggestions for this plan.

Article 410: Purple loosestrife monitoring plan

The Park Service expends considerable time and money on monitoring and removing purple loosestrife from the Riverway, especially below Lake Hayward, which serves as a continual seed source. Consequently we are happy to see this plan and we concur with it. Please insure that we receive a copy of the annual report. We are hopeful that WDNR will utilize the information and take aggressive measures to control this exotic plant in Lake Hayward.

Article 411: Drawdown management plan

We concur with this plan and your strategy to evaluate drawdown effectiveness (page 5 of this plan). We defer to WDNR for any specific comments and the discussion of the timing of the drawdown.

This concludes our comments on the compliance package. If you have questions about our input, please contact Randy Ferrin at 715-483-3284. Thank you again for allowing us the opportunity to review and comment on the compliance plans.

Sincerely,

Anthony L. Andersen
Superintendent

FISH ENTRAINMENT PROTECTION (BARRIER NET) PLAN

ARTICLE 407

HAYWARD LICENSE (FERC PROJECT NO. 2417)

PLAN TO COMPLY WITH ARTICLE 407 OF THE HAYWARD PROJECT LICENCE (FERC PROJECT NO. 2417), FISH ENTRAINMENT PROTECTION (BARRIER NET) PLAN

The Director's Order (from Order on Rehearing, issued May 1, 1996):

Article 407. ...the licensee shall file, for Commission approval, a final, integrated cooperative agreement between it and the Wisconsin Department of Natural Resources (WDNR), incorporating the terms described in the licensee's filings of September 27, and October 11, 1994, for the minimization of fish entrainment through the project by the deployment of a barrier net. The filing shall include, at a minimum: (1) detailed design drawings of the proposed barrier net and support structures; (2) a description of the responsibilities of the licensee and WDNR regarding funding, annual installation and maintenance of the barrier net, and evaluation of the barrier net's effectiveness; (3) a schedule for implementing the plan and protection measures; and (4) documentation that the licensee has consulted with WDNR, the National Park Service, and the U.S. Fish and Wildlife Service with respect to the contents of the final agreement, including giving these agencies at least 30 days to respond.

1.0 Background

The Hayward Hydroelectric Project impounds the Namekagon River in the City of Hayward, Wisconsin, and forms a 240 acre reservoir that is locally known as Lake Hayward. The lake was originally formed in the late-1800s by the construction of a logging-era dam that was subsequently destroyed and then rebuilt. Given that the lake is more than 100 years old, it has experienced considerable siltation in the upper segments and there is an abundance of plant growth. Therefore, the lake today is shallow and weedy, but according to WDNR surveys, contains excellent populations of panfish, forage fish, and most gamefish species (Pratt, 1994). The exception to the latter statement is the walleye population which appears to be considerably below the regional average for northwestern-Wisconsin waters. During the relicensing process for the Hayward Project, the WDNR and the U.S. Fish & Wildlife Service (USFWS) theorized that hydro turbine entrainment was a causative factor in the low number of walleye and that installation of a barrier net in front of the hydro plant's intake canal during the spring of the year (May and June) might lead to an increase in the lake's walleye standing stock. The agencies subsequently forwarded the barrier net concept to the FERC in the form of Section 10 (j) recommendations, and absent any inconsistency with applicable law, the recommendations were accepted by the FERC. The following plan for a fish barrier net to be deployed in front of the Hayward Project's powerhouse for a tentative five-year trial period was developed in response to the license order.

2.0 Drawings and Description of The Proposed Barrier Net and Support Structures

A fish barrier net will be positioned diagonally across the mouth of the intake channel of the Hayward powerhouse from the upstream end of the left concrete training wall to the upstream end of the right steel sheet pile wall (Figure 1). The net will be approximately 75-ft long by 10-ft deep and will be tapered on the ends to roughly match the contour of the lake bottom. The large filtration area of the net will be sufficient to reduce the water approach velocity to considerably less than 0.5-feet per second, thereby reducing the threat of fish impingement on the net. The net will be constructed of knotted, 3/8-inch square, nylon twine that will be treated to reduce algal growth. The top of the net will be supported by floats and an auxillary steel cable that will be strung between the two terminal anchor points (Figure 2). Vertical and horizontal reinforcement lines will be incorporated into the net design to assure that current and gravity forces are not acting on the mesh alone. Likewise, to reinforce the points where the net is attached to the side mounting brackets, a top to bottom sleeve will be sewn onto each end of the net to allow insertion of a continuous support rod. Four 80-100 pound weights, spaced equidistant along the lake bottom, will be used to anchor the net. In addition, the net will be equipped on the downstream side with a 3-ft deep bottom skirt that will have a lead or chain line affixed to assure that the skirt maintains contact with the lake bottom.

The above net design is based on information queried from other hydro and steam electric plant owners who have employed barrier nets to mitigate fish entrainment or impingement impacts. While the net design appears appropriate for the Hayward hydro site, NSP intends to work with the WDNR and follow an adaptive management approach so that as needed changes in equipment or procedures can be made to overcome difficulties and to reasonably assure that the net's effectiveness can be determined.

3.0 Responsibilities of the Licensee and WDNR for Funding, Annual Installation and Maintenance of the Barrier Net, and Evaluation of the Nets Effectiveness at Reducing Fish Entrainment

3.1 Funding Arrangements

Licensee will purchase the above described fish barrier net, one replacement net, and all of the necessary rigging for annual deployment and maintenance of the net throughout the initial five year test period. Licensee will provide funding for installation and maintenance of the net by the WDNR each year of the test period as described in the attached two letters to the Secretary of the FERC: 1) letter dated October 7, 1994 from Mr. Lloyd Everhart, Administrator, Hydro Licensing for NSP, and 2) letter dated October 10, 1994, from Mr. Jeffrey Scheirer, River System Manager for the WDNR. If the barrier net meets the

effectiveness criteria specified in section 3.3.2 after the test period, and if the annual installation of the net is subsequently deemed necessary by the FERC, funding arrangements will have to be resolved between NSP and the WDNR for the duration of the Project license.

3.2 Annual Installation and Maintenance of the Barrier Net

Licensee will deliver the net and rigging for its deployment to the Hayward Project dam or to the WDNR's Hayward Ranger Station at least one week in advance of the net's required installation date (May 1). Licensee will also install a cable diagonally across the head end of the intake canal and net mounting brackets on the intake wall termini, as shown on Figure 3, to functionally assist in net installation and support. The net supporting cable will be stretched tightly about 1- to 1.5-ft above the target elevation of the impoundment and will have sufficient tension to support the net's weight with minimal sag.

In accordance with the October 1994 agreement between NSP and the WDNR, the WDNR is to provide the necessary manpower and associated equipment to deploy, maintain and remove the net throughout the test period. The annual test periods shall begin on or about May 1 and terminate in mid-July of each year (the exact dates will remain flexible and will be coordinated between NSP and the WDNR).

3.3 Responsibility and Procedure for Evaluation of the Barrier Net's Effectiveness

3.3.1 Responsibilities

The WDNR agreed during prelicensing consultation to conduct surveys of the walleye population in Lake Hayward to evaluate the barrier nets effectiveness. Licensee will obtain copies of the WDNR's data and final report for review prior to filing with the FERC.

3.3.2 Determination of Barrier Net Effectiveness

The WDNR and NSP agree that without very careful and thorough planning, monitoring of Hayward Lake's walleye population to evaluate the effectiveness of the barrier net could produce ambiguous and perhaps meaningless results. Confounding factors such as natural variability in fish populations, climatic and hydrologic events, and new fish stocking strategies could easily complicate data interpretation. Because of the importance of this aspect of the barrier net program, the parties agree that additional time should be devoted to developing the details of the effectiveness monitoring plan. NSP and the agencies intend to meet during the winter of 1996-97 to develop the monitoring plan. The forthcoming plan will be forwarded to the FERC as a supplemental to this filing.

4.0 Schedule for Plan Implementation

The timing of the test period for the fish barrier net is complicated by Licensee's requirement to conduct a periodic drawdown of Lake Hayward pursuant to license Article 411. It would be unwise to initiate the barrier net study and to have it interrupted by the drawdown since the drawdown has the potential to change the lake's habitat as well as the fish populations. Moreover, if the drawdown is conducted immediately ahead of the net test period, the results of the barrier net effectiveness study might be biased by changes caused by the drawdown. To overcome this complication, NSP proposes to delay the drawdown at least until the results of the barrier net effectiveness study are evaluated.

The schedule for the fish barrier net test program has not been resolved with the WDNR. The WDNR has suggested that it may be wise to delay initial net deployment for several years so they can gather sufficient data to assess their efforts at stocking extended growth walleye fingerlings in Lake Hayward. NSP and the WDNR will develop a schedule for the project in the upcoming planning meeting and it will be included in the supplemental filing that is mentioned above.

A final report of the effectiveness study results will be filed with the FERC within 180 days of the conclusion of the barrier net's test period.

5.0 Documentation of Agency Consultation

Copies of correspondence to the WDNR, the USFWS and the NPS are attached which document that consultation on the fish barrier net plan was conducted. The WDNR was the only agency that commented on the draft plan and their response is attached. Recommendations by the WDNR on the draft plan have been incorporated into the final version of the plan, where appropriate.

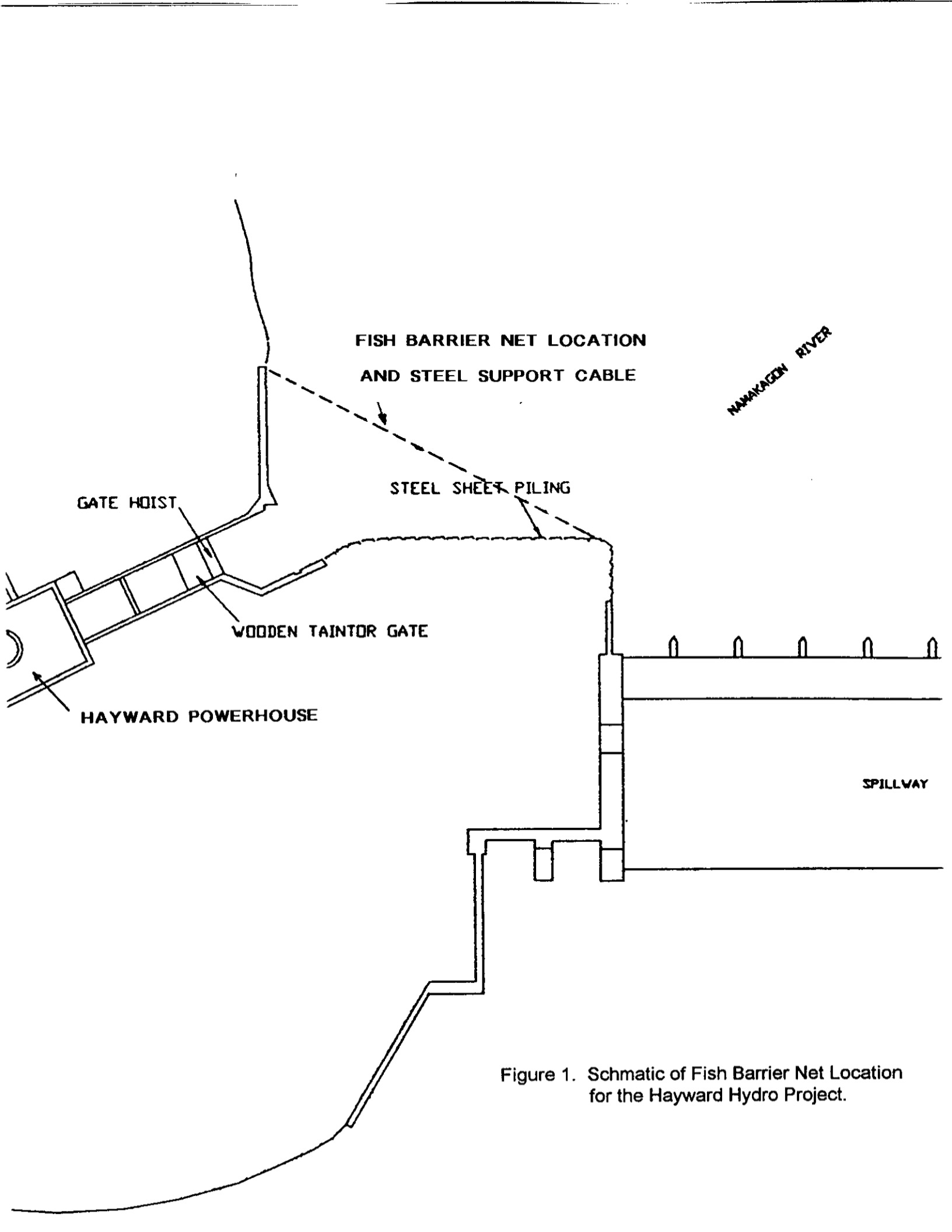

Figure 1. Schmatic of Fish Barrier Net Location for the Hayward Hydro Project.

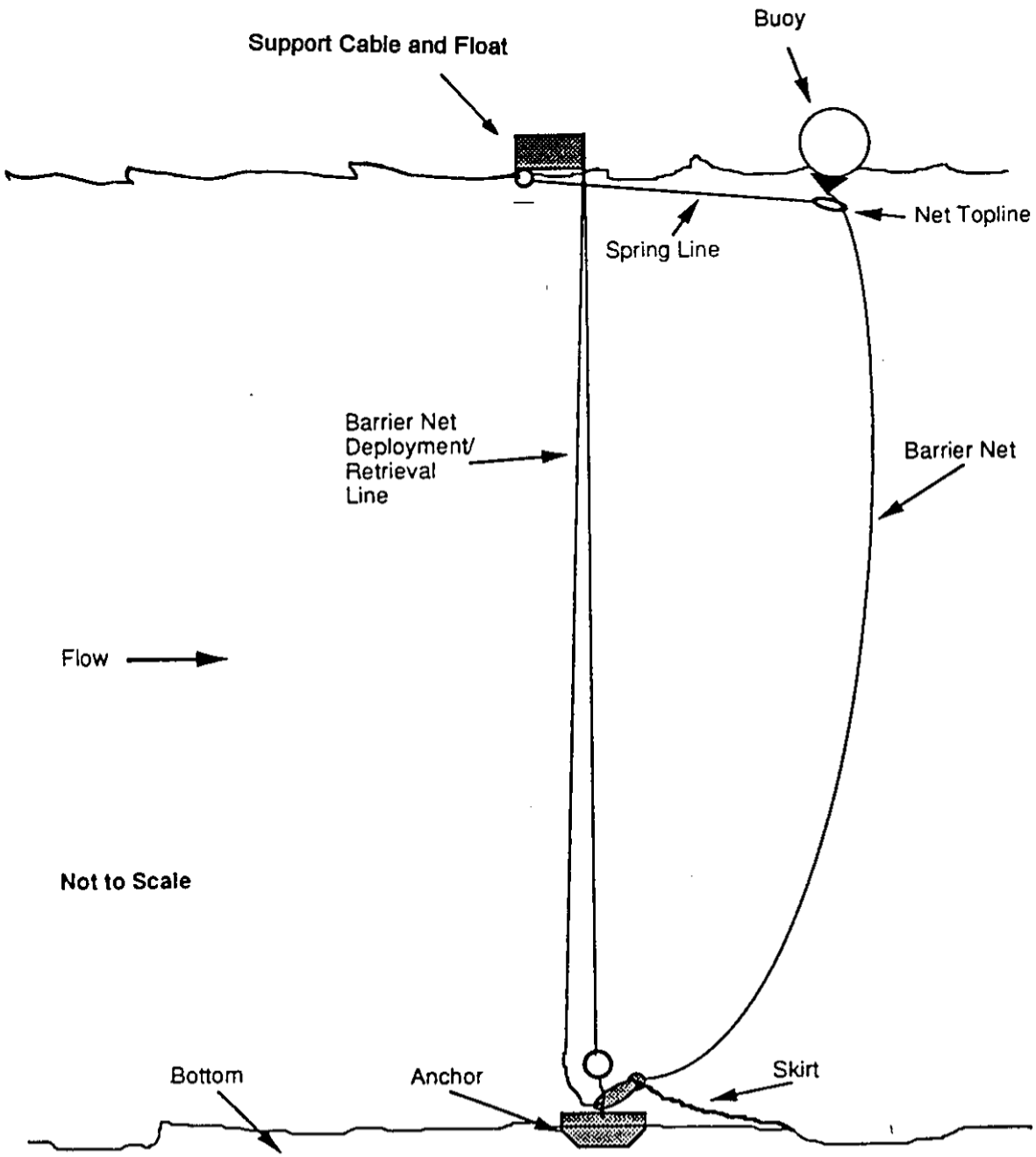

Figure 2. Conceptual Barrier Net Deployment.

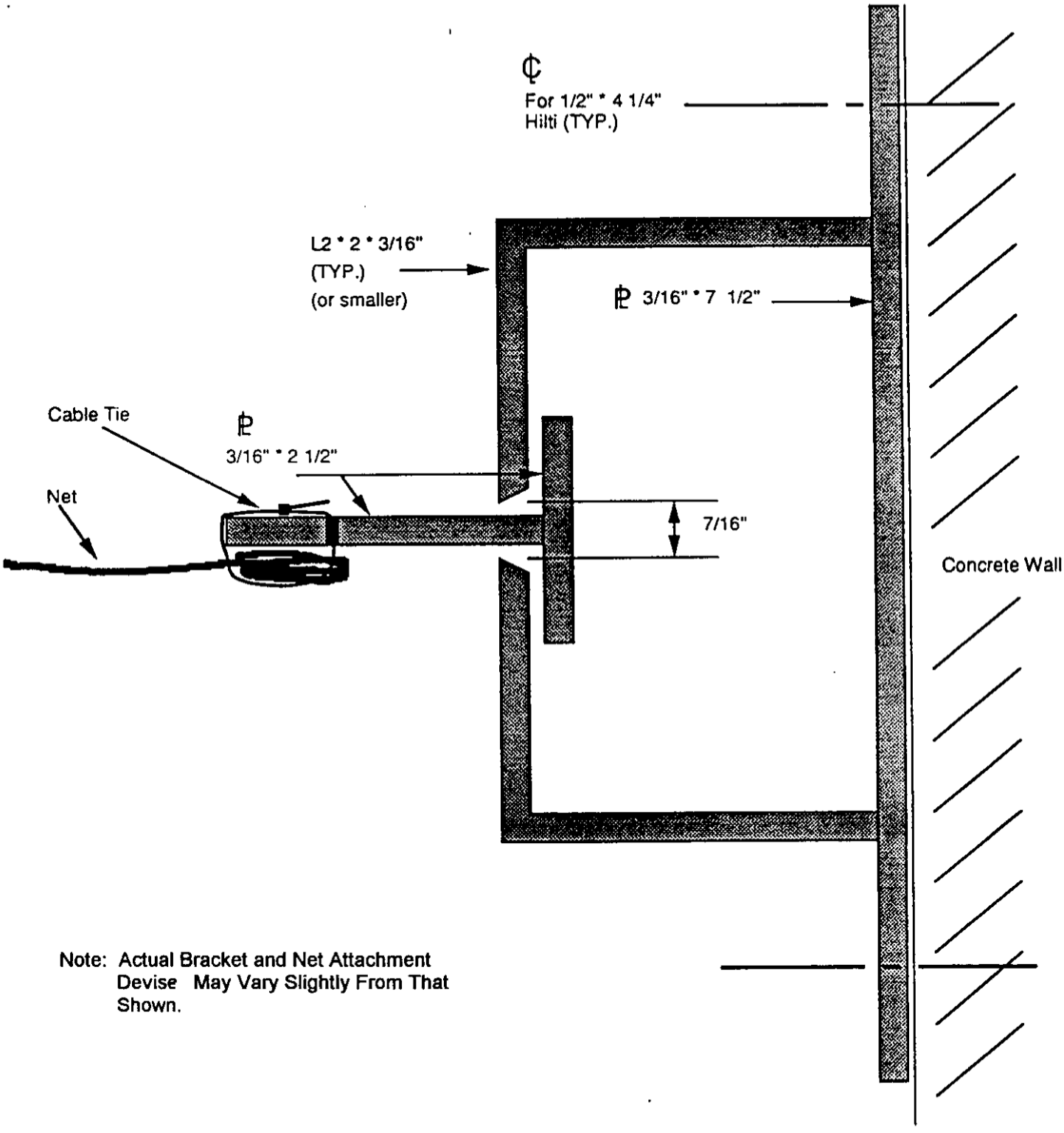

Figure 3. Net -To- Dam Connection Bracket.

ATTACHMENT A

AGENCY CORRESPONDENCE

Northern States Power Company

100 North Barstow Street
P.O. Box 8
Eau Claire, WI 54702-0008
Telephone (715) 839-2621

October 7, 1994

Ms. Lois Cashell, Secretary
Federal Energy Regulatory Commission
825 N. Capital St. - NE
Washington, D.C. 20426

RE: **Hayward Hydroelectric Project, FERC Project No. 2417**
Clarification of Information Filed Pursuant to 10(j) Conference Call

Dear Madam Secretary:

This letter provides clarification for the information that Northern States power Company (NSP) filed on September 23, 1994 relative to the 10(j) conference call that was held on September 15, 1994 for the Hayward Project.

Attachment A of our September 23, 1994 letter includes a cost estimate for purchase, installation and maintenance of a fish barrier net at the entrance to the Project's power canal. The Wisconsin Department of Natural Resources (WDNR) has agreed to provide labor for deployment and maintenance of the net system at an estimated annual cost of $1618 (estimate attached). Our earlier transmittal failed to address the manner of funding for the WDNR's costs over the five year test period. To resolve this issue, funding arrangements were discussed between Mr. Jeff Scheirer, WDNR-Park Falls, and myself on October 5, 1994. It was agreed that NSP will provide funding through a gift account at the rate of $1618 per year for five years to cover the WDNR's labor costs during the net test period.

Hopefully, the above clarification will bring this matter to a close. Should there be any further questions, please contact me at 715/839-2692.

Very truly yours,

Lloyd Everhart

Lloyd D. Everhart, Administrator
Hydro Licensing & Environmental Studies

LDE:dkp

cc: Fred Springer, Director, OHL
Allan Creamer, HL20.1
Jeff Scheirer, WDNR
Frank Pratt, WDNR
Larry Oborny, USFWS
Anthony Anderson, NPS
Angela Tornes, NPS

h:\word6\everhart\1007lde1.doc

Lake Hayward Net Deployment and Maintenance

Man-Power

I.DNR- 2 LTE and LTE crew boss

80 hr.s x 2 men x $6.00/hr. = $480.00

40 hr. x 1 man x $8.25/hr. = $330.80

$710.00 x 15% fringe = $816.50
LTE Sub-Total

II.Diver surviellance (Either private contract or DNR Fire Control form Hayward Office)

2 men x 16 hours x $24.00/hr. = $768.00 Sub-Total

III.Other

Mileage =300 miles x .26 = $78.00
Outboard gas/oil= $12.00
Lunches = none (Home Station)
Misc. = $50.00

Sub-Total, Misc.= $140.00

Grand Total- $1618 per annum for five years. To be included in Project FMF52 as a gift account supplement. (The rest of that account, already budgeted, covers walleye stocking and evaluation.) Above cost figures do not include the cost of the net.

FBP 9/20/94
A:HAYNET

Hi Lloyd- This is my best guess for man-power + associated expenses barrier net. Evaluation is already covered. Cost of net is not.

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

PARK FALLS AREA HEADQUARTERS
P.O. Box 220
875 South Fourth Avenue
Park Falls, Wisconsin 54552
TELEPHONE 715-762-3204
TELEFAX 715-762-4348

October 10, 1994

Ms. Lois D. Cashell, Secretary
Federal Energy Regulatory Commission
825 North Capitol Street, N.E.
Washington, D.C. 20426

COOPERATIVE AGREEMENT FOR BARRIER NET
Hayward Hydroelectric Project
FERC Project #2417
Northern States Power Company

Dear Ms. Cashell:

The purpose of this letter is to confirm the cooperative agreement which the Wisconsin Department of Natural Resources and Northern States Power Company (NSP) negotiated for providing a barrier net to protect against fish entrainment at the Hayward Hydroelectric Project. The agreement arose from discussions which took place during and after the teleconference meeting that was held on September 15, 1994 to resolve outstanding Section 10_j resource issues. We hope that this arrangement brings closure to the barrier net issue.

Under this agreement, NSP would purchase the barrier net along with the necessary rigging and provide $1618 annually to the Department to cover labor costs for seasonal installation, removal, and routine maintenance during the 5-year test period. The funding would be conveyed to the Department in the form of a gift account earmarked for the barrier net at the Hayward Project. This arrangement substantially reduces the original cost estimate for implementing the barrier net recommendation because NSP's travel costs are eliminated. Travel expenses for personnel and equipment from the Department's Ranger Station in Hayward will be negligible, whereas NSP would have had to regularly dispatch a work crew from a distant location to install and service the net.

If after the 5-year test period, the Department's evaluation indicates that the barrier net does provide measurable benefits to the walleye fishery in Lake Hayward, it will be necessary to address this matter again for the continued operation of the barrier net over the term of the license. We anticipate that this same cooperative agreement could be extended as needed, provided that there is an appropriate adjustment to account for inflation.

Recent discussions on the barrier net issue have been quite productive, and we look forward to similar negotiations to solve other resource concerns at NSP's hydroelectric projects. If you have any questions concerning this joint venture, please contact me at the address or phone number on this letterhead.

Sincerely,

Jeffrey Wm. Scheirer

Jeffrey Wm. Scheirer
River System Manager

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary
William H. Smith, District Director

Park Falls Area Headquarters
875 S. 4th Ave., PO Box 220
Park Falls, WI 54552
TELEPHONE 715-762-3204
FAX 715-762-4348

November 6, 1996

Mr. Lloyd Everhart
Northern States Power Company
100 North Barstow Street
P. O. Box 8
Eau Claire, WI 54702-008

Dear Mr. Everhart:

We have several comments on the draft Fish Barrier Net Compliance Plan which Northern States Power Company prepared for its Hayward Hydro Project. We also wish to address your request that we provide the details of a study designed to evaluate the effectiveness of the barrier net treatment. Because of the pivotal importance of the effectiveness study, there appears to be good reason to resume post-licensing consultations later this winter so that we can finalize the details of the evaluation. According to our Water Regulations Specialist, you will not have to obtain a permit for placing either the cable or the net in the waterway at the proposed site. Both of these elements would be considered appurtenances of the dam which is already authorized.

In general we concur with the design concept you proposed for the barrier net and its proposed location. We do have several recommendations for minor modifications which we believe would improve the effectiveness of the net, extend its lifetime, and make installation and removal easier. These benefits, although modest, would nonetheless be worthwhile, since they can be attained at little or no additional cost.

From the limited information available on barrier net deployment, it appears that water velocity less than 0.5 feet/second at the net is critical for successful operation. Preferably, approach velocity should fall in the range of 0.1 to 0.2 feet/second to minimize stress on the net material and rigging. Based on the hydraulic capacity of the turbine and the cross sectional area of the net, the calculated water velocity at the proposed location should be less than 0.5 feet/second. It may be prudent to verify the calculated velocity with actual velocity measurements taken under high flow conditions at various depths and distances from shore along a transect at the proposed net location. These spots checks would ensure that water velocity is suitable at the proposed location before the net is fabricated for that site. If measured velocity was found to be too high, an alternate site or design could be selected. The purpose of this recommendation is to avoid unnecessary costs to your company. We will leave the decision on whether or not to take empirical velocity measurements to your discretion. However, we reserve the right to recommend changes if water velocity at the proposed site proves to be unsuitable.

The minor changes in the design specifications between our original recommendation and the draft plan are acceptable to us. Initially, we suggested white woven nylon mesh with 3/8-inch bar spacing. We do not object to using knotted mesh instead of woven mesh if you believe the knotted mesh will provide greater strength and durability. Our rationale for suggesting white net material was to take advantage of an apparent avoidance behavior which we observed when we caught fewer walleyes in fyke nets with white mesh than we did in nets with dark colored mesh. If extended net life and reduced periphyton accumulation can be obtained by treating the net material with tar-based preservatives and an appropriate algicide, we agree that those practical benefits would

outweigh any incidental benefit which might come from white net material aiding visual avoidance. Furthermore, those avoidance benefits would be short-lived in the Namekagon River since the tannins in the water would eventually stain the net brown. Please feel free to treat the mesh material as planned.

We recommend that you incorporate vertical and horizontal reinforcement lines into the net design so that current and gravity forces are not acting on the mesh alone. Likewise, to reduce stress at the points where the net is attached to the side mounting brackets we suggest that the net should include a sleeve or hem sewn from top to bottom on both sides. A shaft or tube, such as a PVC pipe or wooden 2x4, cut to match the depth of the net at each side, would be inserted through the sleeve and fastened (i.e. bolted) to the T-shaped insert of the side bracket illustrated in Figure 3 of the Draft Plan. This modification will convert the point attachments at the cable ties into a linear attachment, distributing stresses more evenly while providing a continuous seal against entrainment losses. The sleeve could either be fabricated as an integral part of the net, or as an attachment made from some other suitable material. The net manufacturer should be able to provide advice on the number and placement of the line reinforcements as well as the most appropriate design for the sleeves.

We feel that deployment and effectiveness benefits could be gained by installing the support cable slightly above the water level, rather than at the water line. The net supporting cable should be stretched tightly about 1 to 1½ feet above the target elevation of the impoundment. There should be enough tension on the cable to support the net's weight with minimal sag. The net would be hung directly from the cable with a system of short leads fastened on one end to the floatline and on the other end to cable rollers or clips similar to a climber's carabiner. The leads and clips would be spaced along the float line at regular intervals. The net manufacturer should be able to splice leads into the floatline or add rings at appropriate intervals. This system would allow us to secure the net to the cable at shore and slide it across the intake channel in a manner similar to drawing a curtain. One advantage of placing the support cable above the waterline is that any unavoidable sagging should not cause the floatline to droop below the water surface.

We would like to adjust the annual deployment schedule for the barrier net and incorporate some flexibility into the installation and removal dates. Originally, we had recommended seasonal installation from May 1 to June 30 of each year. Upon closer examination of the results of the entrainment study conducted in 1991-92 at the Crowley Hydro Project on the Flambeau River, it appears that most young-of-year walleyes were captured in tailrace net samples between the middle of May and the middle of July. To maximize the benefits to walleye recruitment it is important that the barrier net provides protection during the entire episode when young-of-year fish are vulnerable to entrainment. Consequently, we recommend that the deployment schedule should be modified so that target dates for installation and removal are May 1 and July 15. The two week extension will cover the tail end of the expected period of highest walleye entrainment, and the target dates will provide the necessary flexibility to accommodate adverse flow or weather conditions, work planning conflicts, and manpower availability.

We anticipate that the optimal procedures for installing, maintaining, and removing the barrier net will gradually evolve over time as we gain experience. Similarly, it may be necessary to make reasonable adaptive modifications to the net and its accessories as needed until the bugs are worked out. For instance, the proposed design does not include any floating booms upstream to deflect debris away from the net. If large debris loading hinders effective operation of the barrier, we would recommend installation of upstream log booms or other deflectors to remedy that problem. Modification to the routine operation of the plant may also be required on occasion to facilitate net installation, removal, and maintenance. For example, one potential technique for cleaning periphyton from the mesh material involves diverting run-of-river flows through the spillway section for brief periods rather than through the plant. Some provisions may be needed for us to manually clean periphyton from the net, (i.e. brushing, powerwashing, agitation). Based on our limited experience with barrier nets as entrainment mitigation, at this time it is difficult to foresee all circumstances that may be encountered in operating the seasonal barrier net at the Hayward Project. In this regard we favor an adaptive management approach, whereby reasonable changes would be made as needed to make improvements or overcome difficulties. The underlying goal of this adaptive strategy would be to determine by the end of the test period the design features, deployment techniques, and maintenance procedures for optimal efficiency and performance. If the effectiveness study indicates that continued operation of the barrier net is worthwhile, we suggest that the licensee and the Department consult again and develop a

formalized manual to outline the schedule and procedures for long term operation and maintenance of the barrier net over the term of the license.

Aside from our recommendations for minor changes in net design and operation, we are sure you will agree that the most significant aspect of these post-licensing consultations centers around the evaluation of the barrier net as effective mitigation for entrainment losses. After the trial period, the effectiveness study will provide the basis for the decision to either continue or abandon this protective measure for the rest of the license term. Because the mitigation strategy requires repeated attention over the years from NSP and the Department, we want to make sure that the practice is not simply an annual exercise, but rather that it yields recognizable benefits which can be attributed to the barrier net. Consequently, the effectiveness study must be carefully designed so the results are unambiguous and useful toward making this determination.

The concept of gauging effectiveness of the barrier net through a favorable response in the fish community is appealing in that the success of the treatment is measured by accomplishing a desirable end result, which in this case would be a substantial increase in the adult walleye density of the impoundment. This approach eliminates the need to assess entrainment before and after the application of the barrier net treatment. Likewise, there is no need to address the significance of entrainment losses, or the degree to which those losses should be reduced. As you have pointed out earlier, the proposed evaluation method may be complicated by numerous confounding factors which can also influence fish population density. Some factors are controllable, whereas others are not. Nonetheless, we believe that with a well planned program of sequential treatment applications and thorough evaluations, we can overcome those complexities and determine which factor(s) influence the quality of the recreational fishery in Lake Hayward.

We share your concerns over separation of effects of various treatments, and we agree with your proposal to delay a resource management-based drawdown until after the barrier net test period and evaluation are completed. For the same reason, it may be wise to delay initial net deployment for several years so that we can gather sufficient data to differentiate between the effects of stocking extended growth walleye fingerlings and the effects of providing entrainment protection. In addition, it may be necessary to extend the test period for the barrier net beyond 5 years so that several cohorts can grow to adult size. Stocking extended growth walleye fingerlings in another hydro project with similar configuration, but no barrier net, could serve as a control for comparison in this evaluation. Although the expected resource benefits from these three treatments would be postponed, a phased approach would help to reduce the potential for ambiguity when examining treatment combinations.

While it would be nice to wrap up the loose ends on the barrier net at this time, we may need to continue post-licensing consultations on the effectiveness study. Considering your earlier comments on this issue, we expect that you will agree on the importance of the barrier net evaluation. We want to take advantage of the offer from staff in our Bureau of Research to help with study design and data collection. We suggest a meeting sometime this winter to work out the details of the test and evaluation. I will contact you in early December to schedule a specific time and place.

Recent progress in this cooperative effort has been positive. We hope to continue this productive dialogue through the remaining planning, implementation, testing, and evaluation stages of the barrier net mitigation. Please note that we remain receptive to other alternatives that you may have for the design of the net or the effectiveness study. If there are any other considerations with regard to Article 407 that need to be resolved, we encourage you to consult with us again before you file the Plan with the Commission. You can reach me at (715) 762-3204, extension 131.

Sincerely,

Jeff Scheirer

Jeff Scheirer
Northwest District FERC Project Manager

United States Department of the Interior

NATIONAL PARK SERVICE
St. Croix National Scenic Riverway
401 Hamilton Street
P.O. Box 708
St. Croix Falls, Wisconsin 54024-0708

IN REPLY REFER TO

November 20, 1996

L7425(SACN)

Mr. Lloyd Everhart, Administrator
Hydro Licensing
Northern States Power Company
Post Office Box 8
Eau Claire, Wisconsin 54702-0008

Dear Lloyd:

Thank you for sending us the draft compliance/remediation plans for the Hayward Hydro Project. Unfortunately, due to time constraints, we have not had an opportunity to review them in detail. Randy Ferrin, our staff aquatic resource management specialist, was able to briefly scan the plans and submit some comments. Overall, we concur with the plans and feel the best approach, from our perspective, is to work closely with Northern States Power Company (NSP) and Wisconsin Department of Natural Resources (WDNR) as the plans are finalized and implemented.

Article 401: Fly ash/cinder monitoring plan

We concur with this plan. Please indicate how the fly ash/cinders are applied to the gates. Please insure that the Park Service receives a copy of the results from any analyses done on the fly ash/cinders prior to deployment. An editorial note on page two, section 5.0: delete reference to White River and insert Namekagon River.

Article 403 and 404: Flow monitoring compliance and plan to minimize periods without flow downstream from the Hayward Hydro Project

We basically concur with this plan, but offer the following comments: On page three of the plan, reference is made in the first full paragraph, last sentence, to an operator's daily log. We understand the dam is visited daily by the Trego Dam operator, who works five days a week. How will compliance be insured on the other two days per week? The last paragraph of section 6.0 on page four discusses the possibility of local responders dealing with problems at the dam. We urge that you enact this scenario to provide timely response to problems at the dam.

Article 406: Remediation plan to restore, stabilize, and maintain the Namekagon River channel and shoreline downstream from the Hayward Project spillway

We basically concur with this plan with the following comments: On page four of the plan, section 3.4, we recommend the backhoe used for the project be a tracked vehicle such as an excavator to minimize bottom disturbance from the equipment itself. On page six, top of the page: we recommend that Wilderness Inquiry be consulted on providing suitable handicapped access for the canoe portage, and we differ our recommendation to them.

Article 407: Fish barrier net compliance plan

We differ to WDNR for any comments or suggestions for this plan.

Article 410: Purple loosestrife monitoring plan

The Park Service expends considerable time and money on monitoring and removing purple loosestrife from the Riverway, especially below Lake Hayward, which serves as a continual seed source. Consequently we are happy to see this plan and we concur with it. Please insure that we receive a copy of the annual report. We are hopeful that WDNR will utilize the information and take aggressive measures to control this exotic plant in Lake Hayward.

Article 411: Drawdown management plan

We concur with this plan and your strategy to evaluate drawdown effectiveness (page 5 of this plan). We defer to WDNR for any specific comments and the discussion of the timing of the drawdown.

This concludes our comments on the compliance package. If you have questions about our input, please contact Randy Ferrin at 715-483-3284. Thank you again for allowing us the opportunity to review and comment on the compliance plans.

Sincerely,

Anthony L. Andersen
Superintendent

COMPLIANCE PLAN TO MONITOR PURPLE LOOSESTRIFE

ARTICLE 410

HAYWARD LICENSE (FERC PROJECT NO. 2417)

PLAN TO COMPLY WITH ARTICLE 410 OF THE HAYWARD HYDRO PROJECT LICENSE (FERC PROJECT NO. 2417), PURPLE LOOSESTRIFE MONITORING PLAN

The Director's Order:

Article 410: *Within 6 months of the date of this license (an extension of time was granted until December 1, 1996), the Licensee shall file with the Commission for approval a plan to monitor the distribution and abundance of purple loosestrife (Lythrum salicaria) on the Hayward Project lands and waters, at least annually. The plan shall include, but not be limited to, the following: (1) a description of the monitoring method; (2) a monitoring schedule; and (3) a schedule for providing the monitoring results to the Wisconsin Department of Natural Resources (WDNR), the U.S. Fish and Wildlife Service (FWS), and the Commission.*

1.0 Monitoring Method

The shoreline of Lake Hayward and the Namekagon River project lands downstream from the Hayward Dam will be surveyed by boat during late July/early August of each year to determine the distribution and abundance of purple loosestrife. Loosestrife stands will be rated as present, abundant, or non-existent. Present would indicate a light scattering of a few plants over an area. Abundant would indicate a dense growth of numerous plants over an area. Non-existent would indicate that there were no plants present.

Purple loosestrife locations will be mapped on the Lake Hayward bathymetric map. The mapping will allow for comparisons to be made between different years to determine short-term and long-term trends in plant populations. Calculations will be made which will determine the spread of the noxious weed on an annual basis. A planimeter will be used to determine shoreline lengths occupied by purple loosestrife. The equation for determining percent coverage (abundant, present, non-existent) of the flowage shoreline is as follows:

$$\%\ \text{coverage of shoreline:} \quad \frac{(\text{length of loosestrife populations})}{(\text{total length of flowage perimeter})} \times (100)$$

2.0 Monitoring Schedule

The Hayward Flowage and downstream shoreline will be surveyed annually when the purple loosestrife plants are flowering. This is the best time of the year to survey for purple loosestrife because the bright purple flowers are easy to identify against the shoreline. The flowering season also enables the surveyor

to identify pioneering plants that otherwise might be missed during other seasons. The appropriate resource agencies will be notified at least two weeks in advance of the purple loosestrife survey so that they may participate.

3.0 Monitoring Results

After completion of the late-summer survey, the Licensee will forward the map of purple loosestrife locations and the percent coverage calculations to the WDNR, USFWS and the NPS for review. This will be done by the end of September of each year until the resource agencies deem it unnecessary to continue surveying.

4.0 Control Methods

Purple loosestrife is a very prolific plant and its geographic range has spread significantly around the State of Wisconsin and the United States in a very short time. Control measures are generally labor intensive and expensive. Some effective methods that have been utilized are hand pulling/digging and herbicidal treatment. Control measures should be implemented before the onset of seed production to prevent spreading the seeds.

Biological control has been an evolving field in the Midwest because of the difficulty in controlling the spread of purple loosestrife. The WDNR is currently evaluating a species of beetle and weevil with feeding habits specific to the purple loosestrife plant at several sites around the state.

The Licensee will cooperate with the resource agencies in an attempt to control purple loosestrife populations on Lake Hayward. The WDNR will be the lead agency so that consistent and effective control methods can be implemented on a statewide basis.

5.0 Agency Comments

Correspondence with the resource agencies is included in Attachment A of this submittal.

ATTACHMENT A

AGENCY CORRESPONDENCE

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary
William H. Smith, District Director

Park Falls Area Headquarters
875 S. 4th Ave., PO Box 220
Park Falls, WI 54552
TELEPHONE 715-762-3204
FAX 715-762-4348

November 21, 1996

Mr. Lloyd Everhart
Northern States Power Company
100 North Barstow Street
P. O. Box 8
Eau Claire, WI 54702-008

Dear Mr. Everhart:

The draft plans that you prepared to monitor purple loosestrife at Northern States Power Company's Hayward and White River hydro projects are satisfactory. It appears that no substantial adjustments will be necessary.

We concur with the separation of responsibilities between the Department and the licensee as outlined in the draft plans. NSP will monitor the project shoreline annually and provide the survey results to the Department. The monitoring methods and schedule that you proposed are both fine. We ask that you notify us at least 2 weeks before each annual shoreline survey so we can participate if we choose to do so. A phone call to our Northwest District FERC Project Manager will be sufficient. The Department will assume the lead role in any program to control purple loosestrife on project waters. Recent advances with specific biological control agents appear to offer the most promise for containing the invasive spread of this exotic species on an ecosystem scale. If the Department determines that control of purple loosestrife is necessary or desirable on project waters, either as a proven or an experimental method, the licensee would provide reasonable cooperation to the Department in those efforts.

Since a prescription to control purple loosestrife at White River may not come until later in the license term, we believe that it is important to explain what we expect the licensee to provide in the form of reasonable cooperation. An example of reasonable division of duties in such an endeavor might include the licensee funding the cost of intensive herbicide treatment on its shorelands, or sharing the cost of a control program with the Department or a Lake Association. Similarly, NSP could participate by offering the services of its Communications Department to distribute the public notification required for such actions. Other examples of fair cooperation could include furnishing manpower or making temporary operational changes. Our purpose here is not to list all conceivable scenarios or to place strict bounds on the licensee's level of participation. Rather, we hope to avoid misunderstanding among staff in our organizations who may be involved if this matter arises again. We encourage innovative collaboration among interested parties in future attempts to control purple loosestrife. However, neither the Department, nor the licensee, nor any other group or organization should be expected to assume sole responsibility for control efforts at these hydro projects. We offer these comments for clarification only. There is no need to amend the monitoring plans to incorporate the comments in this paragraph.

This letter should wrap up post-licensing consultations on purple loosestrife management at White River and Hayward. If you have any questions with regard to our comments on this draft plan, you can reach me at (715) 762-3204, extension 131.

Sincerely,

Jeff Scheirer

Jeff Scheirer
Northwest District FERC Project Manager

United States Department of the Interior

NATIONAL PARK SERVICE
St. Croix National Scenic Riverway
401 Hamilton Street
P.O. Box 708
St. Croix Falls, Wisconsin 54024-0708

IN REPLY REFER TO

November 20, 1996

L7425(SACN)

Mr. Lloyd Everhart, Administrator
Hydro Licensing
Northern States Power Company
Post Office Box 8
Eau Claire, Wisconsin 54702-0008

Dear Lloyd:

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Article 411: Drawdown management plan

We concur with this plan and your strategy to evaluate drawdown effectiveness (page 5 of this plan). We defer to WDNR for any specific comments and the discussion of the timing of the drawdown.

This concludes our comments on the compliance package. If you have questions about our input, please contact Randy Ferrin at 715-483-3284. Thank you again for allowing us the opportunity to review and comment on the compliance plans.

Sincerely,

Anthony L. Andersen
Superintendent

LAKE DRAWDOWN MANAGEMENT PLAN

ARTICLE 411

HAYWARD LICENSE (FERC PROJECT NO. 2417)

PLAN TO COMPLY WITH ARTICLE 411 OF THE HAYWARD HYDRO PROJECT LICENSE (FERC PROJECT NO. 2417), LAKE DRAWDOWN MANAGEMENT PLAN

The Director's Order (as modified by Order On Rehearing dated May 1, 1996):

Article 411. ... the Licensee shall file with the Commission for approval a drawdown management plan for the control of nuisance aquatic weed growth on Hayward Lake. The Licensee shall develop this plan based on the drawdown management plan for Hayward Hydro flowage developed by the Wisconsin Department of Natural Resources (WDNR) in the WDNR letter to the commission dated October 1, 1993, but modified to include: (1) provisions for implementing management based drawdowns, where the need for and the depth, timing and duration of such drawdowns are determined cooperatively with the WDNR, the U.S. Fish and Wildlife Service (FWS), and the National Park Service (NPS), and are based on documented fish and wildlife needs at the project; (2) a non-emergency drawdown ramping rate provision stipulating that the Licensee would not lower the pond level more than 6 inches per 24 hours, which would occur at a rate of about 1 inch every 4 hours; (3) a cooperative agreement between the Licensee and the WDNR to monitor sediments and sensitive biological resources during drawdowns; (4) a schedule for implementing any planned drawdowns; (5) a strategy to evaluate the effectiveness of the management-based drawdowns; (6) cost estimates for implementing any drawdowns; and (7) comments from the resource agencies on the plan. Further, ... the Licensee's plan should contain provisions for an initial test drawdown for a period of 5.5 months, or for whatever lesser period the Licensee, the WDNR, the FWS, and NPS agree on. The results of the initial test drawdown would be used to make modifications to any subsequent managed drawdowns (i.e., the plan shall incorporate provisions for adaptive management).

1.0 Introduction

During the term of the license for the Hayward Hydro Project, periodic maintenance, dam safety concerns, and resource management needs may necessitate drawdowns of Lake Hayward. In recognition of such needs, the WDNR, the FWS and the NPS (hereinafter "Agencies") recommended development of a drawdown management plan during the relicensing process for the Hayward Project. Their objective in recommending the plan was to facilitate the planning and implementation of drawdowns while at the same time incorporating environmental safeguards, management enhancement, public notification, and operational considerations. The following discussion defines the drawdown plan objectives, protective measures, and procedures that shall be followed by NSP to assure minimum controversy and negative environmental

impact. Included is a specific protocol for an experimental management-based drawdown.

2.0 Objectives

This plan provides guidance to personnel of Northern States Power Company (NSP) relative to hydro operational constraints, environmental considerations, public notification, and agency approvals for planned drawdowns of Lake Hayward. Included are provisions for maintenance-related and management-based drawdowns as well as definition of responsibilities between NSP and the Agencies for different elements of the plan.

3.0 Plan Elements

3.1 Public Notification

Diverse recreational, commercial, and jurisdictional interests on the Namekagon River near the Hayward Project site dictate the need for a proactive communications plan relative to any scheduled drawdown of Lake Hayward. To be responsive to this need, NSP's Hydro Department shall interact with the company's Communications Department on the earliest possible date following Agency confirmation of a pending drawdown. The Communications Department shall then develop a news release for distribution to the local news media (Sawyer County Record and radio stations WRLS, WHSM, and WOJB), City of Hayward, Town of Hayward, Sawyer County Board, Hayward Lions Club, Lumberjack World Championships, Winterfest, and the American Birkebeiner Foundation. The general media release shall be made at least 30 days in advance, whereas, all jurisdictional and commercial interests shall be informed a minimum of 120 days prior to the drawdown, if possible. The radio stations will be instructed to air the public service announcement about the drawdown at least once daily commencing one week prior to the start of the drawdown until the maximum depth is reached. At the same time, notices of the scheduled drawdown shall be posted at conspicuous locations at the public access sites and recreational facilities around the Project waters and at other prominent locations in the community.

3.2 Agency Notification and Approval

The WDNR shall be notified and their approval sought for all non-emergency[1] drawdowns. The Hydro Department shall be responsible for completing and filing a permit application (WDNR Form 3500-45) and a specific lake drawdown management plan (developed in accordance with this guidance document) at

[1] For the purposes of this plan, an "emergency" is defined as any situation or condition that poses an imminent threat to public or dam safety and a drawdown is necessary to protect public life, health or property. The WDNR is to be notified within 24 hours of any "emergency " drawdown.

least 120 days, and preferably one-year, in advance of the planned drawdown. The WDNR's approval will contain either an acknowledgement that the procedures outlined in the drawdown management plan are adequate to protect the public interest, or recommended modifications to the plan.

3.3 Planning Considerations

3.3.1 Operational Drawdown

Thorough planning, including development of a project-specific drawdown management plan, shall be conducted by NSP staff before undertaking any operationally-related drawdown of Lake Hayward. Factors that shall be addressed and included in the drawdown management plan include:

- Resource Management Considerations: The first option considered shall be to coordinate any operational or construction related drawdown with any resource management drawdown that may be contemplated at the time.

- Need: If a resource management drawdown is not contemplated in the forseeable future, all economical alternatives shall be considered before opting for a construction drawdown. Possible alternatives that shall be considered before determining that a drawdown is necessary include use of divers for inspections and coffer dams for construction projects. Total drawdowns shall be avoided unless there is no other economically practical alternative to accomplish the work.

- Depth: The minimum necessary depth to accomplish the required maintenance or inspection shall be determined and adhered to throughout the drawdown. While planning the drawdown depth, consideration must be given to the effect on sediment scouring, possible resuspension, and downstream transport.

- Timing and Duration: Scheduled drawdowns shall coincide with periods of low biological productivity and low recreatioal use (fall or winter). Work activities and equipment needs shall be scheduled so that work can commence immediately when the desired drawdown stage is reached and be completed without unnecessary delays. Every effort shall be made to minimize drawdown duration.

- Ramping Rates: Every effort shall be made to assure that the rate of drawdown does not exceed 0.5 feet per 24 hours. The drawdown shall proceed at a constant rate (about one-inch every four hours) to avoid sudden changes in water level. The refill rate can be as fast as possible while accommodating downstream minimum flow requirements.

- Minimum Flow: Sufficient water shall be passed during the refill of Lake Hayward to assure that the powerhouse tailrace and downstream river channel are not dewatered. At no time shall the minimum flow release be less than the $Q_{7\text{-}10}$ for the Namekagon River unless the Agencies concur that a lower flow is adequate to protect the river's resources. In addition, a minimum of 8 cfs shall be directed into the spillway channel unless the Agencies concur that this requirement can be voided.

- Sediment Monitoring: Prior to initiation of the drawdown, the need for sediment monitoring will be discussed with the Agencies, and if determined necessary, shall be undertaken by either the WDNR or by NSP. The WDNR has agreed to assume the lead role for sediment monitoring, with cooperation from NSP, provided that at least one of the objectives of the drawdown serves to enhance natural resources or environmental quality. On the other hand, if a drawdown is needed for a single, project-related purpose, NSP shall assume responsibilty for sediment monitoring.

- Environmentally Sensitive Species and Habitats: Input shall be sought from the Agencies at the time of permit application concerning potential impacts to sensitive biological resources and any pre- or post-drawdown monitoring of those resources that may be required. If monitoring is deemed necessary, the work shall be undertaken by either the WDNR, in cooperation with NSP, or by NSP alone, in accordance with the responsibility provisions presented above for sediment monitoring. The responsibility criteria shall apply to the cost of monitoring and control of purple loosestrife, as well as to other sensitive biological components such as threatened or endangered species.

3.3.2 Management-Based Drawdowns

During relicensing consultation, the Agencies recommended that NSP initially test a 5.5 month long lake management drawdown of 3-ft depth to determine its effectiveness at controlling nuisance aquatic weed growth and consolidating sediments in Lake Hayward. The test drawdown was to be used to evaluate the positive and negative impact on environmental and recreational resources in Lake Hayward and whether provisions should be made in the Project license for recurrent management-based drawdowns. In response to the Agencies' recommendation, the FERC incorporated language in the Project license requiring NSP to conduct an initial test drawdown of 5.5 months duration "or for whatever lesser period that licensee and the Agencies agree upon." The following is NSP's approach to address the license requirement.

Drawdown Schedule: NSP proposes to undertake the management-based drawdown the winter after completion of the tentative 5-year long fish barrier net effectiveness study that is to be conducted pursuant to license article 407. The rationale for delaying the drawdown until the barrier net study is concluded is

that the drawdown has the potential to significantly change the physical habitat and fish populations in the lake. Moreover, there is likely to be progressive "recovery" from the drawdown over several years. These factors would make it difficult, if not impossible, to measure how the lake's walleye and other fish populations respond to installation of the fish barrier net and the net's effectiveness at reducing fish turbine entrainment. In comments received from the WDNR on the draft drawdown management plan, they concurred with NSP's proposal to delay the management-based drawdown until completion of the barrier net study.

Drawdown Duration, Depth and Implementation Protocol: The schedule for the initial management-based drawdown shall be determined after the fish barrier net study is completed. Within 6-months of the conclusion of the barrier net study, a consultation meeting will be held with the Agencies and with the local stakeholders that are identified in Section 3.1 of this plan to determine the exact timing and duration of the drawdown. NSP favors a shorter duration drawdown than the 5.5 month long drawdown advocated by the Agencies but is willing to delay discussion of this issue until the planning session for the initial management-based drawdown. Planning and implementation of the drawdown shall be accomplished by NSP staff at that time, in cooperation with the Agencies, in accordance with the procedures and practices identified in Section 3.3.1 of this plan.

Strategy To Evaluate Drawdown Effectiveness: To scientifically evaluate the effectiveness of management-based drawdowns of Lake Hayward would be prohibitively time consuming and expensive because of the many physical, chemical and biological components impacted by the drawdown. Therefore, a simplistic, subjective evaluation approach is proposed to be followed that is based on the professional judgement of a team of Agency, NSP and interested stakeholder representatives. The team will be assembled at least one-year prior to the scheduled drawdown and will develop a list of "effectiveness indicators" that can be simply and quickly field verified to assess pre- and post-drawdown conditions. The WDNR's Bureau of Research may be asked by the team to provide recommendations for quantitative measures of effectiveness that are considered applicable. The indicators are likely to include pre-determined measures of sediment relocation and compaction, macrophyte community modifications, fish species and/or community response, and perhaps water quality changes. The length of time and frequency of monitoring will be left to the discretion of the team although it must be recognized that several years may be required to assess recovery and whether the benefits out-weigh the negative aspects of drawdown. Results of the initial test drawdown will be used to plan or to make modifications for any subsequent management drawdowns that may be undertaken.

Cost Estimate For Implementing Drawdown: It is impossible to develop a firm cost estimate for a drawdown without knowing its timing, depth and duration. NSP developed a cost estimate for conducting the Agency-recommended 5.5 month long , 3-ft winter drawdown and the cost in lost generation (using 1993 marginal energy costs) was $3,300 or about 15% of the annual gross energy value for the Hayward Project. Other costs that would be incurred but not calculated for such a drawdown include: 1) modifications to the intake curtain wall of the powerhouse; 2) cost of addition and operation of a powerhouse heating system; and 3) lost revenue to the City of Hayward business community from altered or cancelled winter sports events that utilize the frozen surface of Lake Hayward.

4.0 Documentation of Agency Consultation

Correspondence to and from Agencies documenting consultation on this management plan is attached. The WDNR provided comments on the draft plan while the NPS deferred to the WDNR for their comments. The FWS did not comment. Recommendations from the WDNR have been considered and incorporated into this final version of the plan, where appropriate.

ATTACHMENT A

AGENCY CORRESPONDENCE

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary
William H. Smith, District Director

Park Falls Area Headquarters
875 S. 4th Ave., PO Box 220
Park Falls, WI 54552
TELEPHONE 715-762-3204
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November 22, 1996

Mr. Lloyd Everhart
Northern States Power Company
100 North Barstow Street
P. O. Box 8
Eau Claire, WI 54702-008

Dear Mr. Everhart:

The Lake Drawdown Management Plan that you drafted for planned reservoir drawdowns at the Hayward Hydroelectric Project looks fine to us. Northern States Power and the Department have already worked out many of the important details of the plan through earlier consultations. Our comments below should clarify how this plan would be used in future drawdown applications at Lake Hayward. We also want to clearly define the responsibilities of the licensee and the Department in drawdowns scheduled to accomplish maintenance or resource management objectives over the duration of the license term.

Specific Drawdown Management Plan - The Lake Drawdown Management Plan should serve as a generic template of established guidelines to prepare and submit a specific plan for Department review and comment when the actual need for a drawdown arises. This approach will give the Department added flexibility in weighing the potential trade-offs among resource values under the specific circumstances which may develop in the future. Advance planning will also allow the Department to consider special procedures that could minimize the adverse effects on fish and wildlife resources, such as monitoring sediments and sensitive resources. Weighing the unique circumstances in effect when the need for a drawdown is identified should also allow the licensee to propose options to minimize lost power generation while still preserving the drawdown's identified purposes.

All of the planning considerations outlined in Section 3.3.1 of the draft plan should be addressed when NSP prepares a specific drawdown management plan for the Hayward Project. Upon completing our review of the specific plan, we may specify operational conditions or limitations on a proposed drawdown, but our final approval will not be granted by permit. According to our Water Regulations and Zoning Specialist, a formal permit application is not required for Department approval of non-emergency drawdowns because there is no minimum authorized water level associated with Lake Hayward. You may still use WDNR Form 3500-45 to present the specified elements of the drawdown plan, if that application form is convenient for you. Instead of issuing a permit, the Department will either provide written acknowledgement that the procedures outlined in the drawdown management plan are adequate to protect the public interest, or we will recommend modifications to the plan. The schedule in the draft plan for at least 120 days and preferably one year advance notification is acceptable to us.

Public Notification - We have a few minor comments concerning the public notification procedures to be followed in future plans for scheduled reservoir drawdowns. The general media release should be made at least one month in advance since some newspapers in the region are published only once weekly. This will allow the published notice to appear at least twice before the drawdown begins. Public service announcements should be aired at least

once daily on local radio stations from one week prior to the start of the drawdown until the maximum depth is reached. Public notification for scheduled drawdowns should also include posting notice at conspicuous locations at the public access sites and recreational facilities around the project waters and at other prominent locations in the community.

Drawdowns for Resource Management - We share your concerns about being able to separate the effects of various treatments which could be applied at Lake Hayward. Simultaneous application of several management techniques certainly could complicate the follow-up evaluations and raise question as to which treatment was actually responsible for any change in the aquatic community. We agree with your proposal to delay a resource management-based drawdown until after the effectiveness study of the barrier net is concluded. As we indicated in our comments on your barrier net plan, proper evaluation of both of these adaptive management strategies is essential to determine if they produce tangible benefits which warrant continued application throughout the license term. Implementing these two treatments in sequence, rather than at the same time, should simplify the evaluation of both treatments.

It could be necessary to further postpone the initial management-based drawdown because an adequate evaluation of the barrier net protection may require us to collect several years of pre-treatment data for comparison. Additionally, the expected benefits from reduced entrainment and increased recruitment may require more than 5 years before the response is apparent in the adult walleye population. Consequently, we will probably recommend a longer test period for the barrier net. These potential delays should help to alleviate some of your earlier concerns about power generation losses and recreational conflicts since there would be potentially fewer drawdowns for resource management over the license term.

We agree that the specifics (i.e. depth, duration, timing, etc.) for the initial management-based drawdown should be determined in consultation with the Department and with input from the local interests when its time to proceed with the drawdown. In addition to these considerations, the Department should also reevaluate the need for a management-based drawdown at that time. This will allow us to take into consideration any changes in the current knowledge on the merits of drawdowns as well as our experiences with other management-based drawdowns which take place between now and then. Likewise, the details of the effectiveness study to evaluate the initial drawdown should be finalized during those consultations. In general, we concur with your recommendation for a subjective evaluation of the drawdown's effectiveness based on the professional judgement of a team of agency and company representatives. At that time, the Department's Research staff will provide recommendations for quantitative measurements of success. These measurable indicators should add strength to the qualitative effectiveness indicators you suggested. We anticipate that the specific drawdown management plan (described above) for any management-based drawdown of Lake Hayward would be prepared jointly by the licensee and the Department. Because this type of drawdown is completely predictable, planning should begin at least eighteen months before the scheduled start date.

For the same reasons we outlined in our comments on the Commission's Draft Environmental Assessment for this hydro project, we do not agree with your alternate proposal for a 30- to 60-day drawdown in late fall and early winter. Because drawdowns involve a major perturbation on the ecosystem, a drawdown should be used only when it is essential to achieve multiple objectives, and then the drawdown should be implemented to maximize its desired effects. Lesser efforts would tend to destabilize the system and permit opportunistic species to flourish. As we explained earlier, we believe that a winter drawdown should last longer than 60 days, but we remain receptive to refilling the reservoir before April 1.

Similarly, we hold strong reservations that reservoir drawdowns should not be implemented for a single purpose, including an individual resource management benefit, such as control of native plant species alone. A lake basin-wide drawdown solely for aquatic plant management could be too harsh a treatment for the potential gains, which may be temporary. We continue to view drawdowns as an option for plant control when there are other benefits

to be gained as well. We have already enumerated the multiple resource management objectives of the drawdown we proposed, and we hope to expand the potential benefits by coordinating future drawdowns for resource management with those scheduled for maintenance, repair, or inspection of project structures.

Purple Loosestrife Control - A reservoir drawdown will probably encourage the spread and increase the density of purple loosestrife on project shorelands. Therefore, a loosestrife control effort should take place on the entire shoreline of the impoundment at least one summer before the scheduled drawdown so that the standing crop and seed stock of purple loosestrife is reduced. After the drawdown, a similar effort may be needed to ensure that loosestrife does not achieve a greater dominance in the plant community than it had before the drawdown. The roles of the Department and the licensee in cooperative loosestrife control efforts are outlined in a separate compliance plan for the Hayward Project. The propagation of purple loosestrife is a real threat and damaging consequence of reservoir drawdowns which must be reconciled if we determine that the potential benefits are worthwhile.

Monitoring Responsibilities - With regard to monitoring sediments and sensitive species during the drawdown, the Department would assume the lead role with cooperation from the licensee provided that at least one of the objectives of the drawdown serves to enhance natural resources or environmental quality. On the other hand, if a drawdown is needed solely for maintenance, repair, or inspection, the licensee should be responsible for monitoring sediments and sensitive resources. Under those circumstances, the licensee may have to contract with a consultant qualified to do the monitoring which the Department prescribes. Similarly, if a drawdown is undertaken for a single project-related purpose, the licensee should assume the full cost of controlling purple loosestrife before and after the drawdown. We anticipate that such a scenario would be rare because our preference is to avoid single purpose drawdowns altogether. Given enough advance notification, we would be receptive to blending resource management goals with maintenance-related drawdown objectives.

For drawdowns with resource management objectives, the same team assembled to evaluate the effectiveness of the drawdown would determine monitoring needs, based on the information available at that time. If additional information is required, the Department would conduct the necessary surveys with reasonable cooperation from the licensee. The team would include representatives from several Department programs, including water resources, water supply, endangered resources, wildlife, and fisheries. We anticipate that the monitoring effort would focus on sediment mobilization, residential and municipal wells, aquatic plants, fish, furbearers, reptiles, amphibians, and recreation. Certainly, each of these considerations would be thoroughly examined by the team when it reevaluates the need for the drawdown. Not all impacts are foreseeable at the planning stage, however. Other considerations may be added to the monitoring phase as needed. The team would recommend modification or cancellation of drawdown procedures if the team concludes that the monitoring results indicate those resources are being adversely affected beyond the benefits expected from the drawdown. We would expect the licensee's cooperative role in monitoring would involve making observations, recording measurements, carefully regulating drawdown and refill rates, and implementing other operational changes.

These comments should conclude post-licensing consultations on this issue until the need for a reservoir drawdown is identified at Lake Hayward. If any of our comments need clarification, you can reach me at (715) 762-3204, extension 131.

Sincerely,

Jeff Scheirer

Jeff Scheirer
Northwest District FERC Project Manager

United States Department of the Interior

NATIONAL PARK SERVICE
St. Croix National Scenic Riverway
401 Hamilton Street
P.O. Box 708
St. Croix Falls, Wisconsin 54024-0708

IN REPLY REFER TO

November 20, 1996

L7425(SACN)

Mr. Lloyd Everhart, Administrator
Hydro Licensing
Northern States Power Company
Post Office Box 8
Eau Claire, Wisconsin 54702-0008

Dear Lloyd:

Thank you for sending us the draft compliance/remediation plans for the Hayward Hydro Project. Unfortunately, due to time constraints, we have not had an opportunity to review them in detail. Randy Ferrin, our staff aquatic resource management specialist, was able to briefly scan the plans and submit some comments. Overall, we concur with the plans and feel the best approach, from our perspective, is to work closely with Northern States Power Company (NSP) and Wisconsin Department of Natural Resources (WDNR) as the plans are finalized and implemented.

Article 401: Fly ash/cinder monitoring plan

We concur with this plan. Please indicate how the fly ash/cinders are applied to the gates. Please insure that the Park Service receives a copy of the results from any analyses done on the fly ash/cinders prior to deployment. An editorial note on page two, section 5.0: delete reference to White River and insert Namekagon River.

Article 403 and 404: Flow monitoring compliance and plan to minimize periods without flow downstream from the Hayward Hydro Project

We basically concur with this plan, but offer the following comments: On page three of the plan, reference is made in the first full paragraph, last sentence, to an operator's daily log. We understand the dam is visited daily by the Trego Dam operator, who works five days a week. How will compliance be insured on the other two days per week? The last paragraph of section 6.0 on page four discusses the possibility of local responders dealing with problems at the dam. We urge that you enact this scenario to provide timely response to problems at the dam.

Article 406: Remediation plan to restore, stabilize, and maintain the Namekagon River channel and shoreline downstream from the Hayward Project spillway

We basically concur with this plan with the following comments: On page four of the plan, section 3.4, we recommend the backhoe used for the project be a tracked vehicle such as an excavator to minimize bottom disturbance from the equipment itself. On page six, top of the page: we recommend that Wilderness Inquiry be consulted on providing suitable handicapped access for the canoe portage, and we differ our recommendation to them.

Article 407: Fish barrier net compliance plan

We differ to WDNR for any comments or suggestions for this plan.

Article 410: Purple loosestrife monitoring plan

The Park Service expends considerable time and money on monitoring and removing purple loosestrife from the Riverway, especially below Lake Hayward, which serves as a continual seed source. Consequently we are happy to see this plan and we concur with it. Please insure that we receive a copy of the annual report. We are hopeful that WDNR will utilize the information and take aggressive measures to control this exotic plant in Lake Hayward.

Article 411: Drawdown management plan

We concur with this plan and your strategy to evaluate drawdown effectiveness (page 5 of this plan). We defer to WDNR for any specific comments and the discussion of the timing of the drawdown.

This concludes our comments on the compliance package. If you have questions about our input, please contact Randy Ferrin at 715-483-3284. Thank you again for allowing us the opportunity to review and comment on the compliance plans.

Sincerely,

Anthony L. Andersen
Superintendent