

PALISADES PLANT

FACILITY OPERATING LICENSE DPR-20

APPENDIX B

**ENVIRONMENTAL PROTECTION PLAN  
(NON-RADIOLOGICAL)**

Amendment No. 63, 176

PALISADES PLANT  
ENVIRONMENTAL PROTECTION PLAN  
(NON-RADIOLOGICAL)  
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## 1.0 Objectives of the Environmental Protection Plan

The Environmental Protection Plan (EPP) is to provide for protection of environmental values during construction and operation of the nuclear facility.

The principal objectives of the EPP are as follows:

- (1) Verify that the plant is operated in an environmentally acceptable manner, as established by the FES and other NRC environmental impact assessments.
- (2) Coordinate NRC requirements and maintain consistency with other Federal, State and local requirements for environmental protection.
- (3) Keep NRC informed of the environmental effects of facility construction and operation and of actions taken to control those effects.

Environmental concerns identified in the FES which relate to water quality matters are regulated by way of the licensee's NPDES permit.

## 2.0 Environmental Protection Issues

In the final addendum to the FES-OL dated February 1978 the staff considered the environmental impacts associated with the operation of the Palisades Plant. Certain environmental issues were identified which required study or license conditions to resolve environmental concerns and to assure adequate protection of the environment.

### 2.1 Aquatic Issues

Specific aquatic issues raised by the staff in the FES-OL were:

The need for aquatic monitoring programs to confirm that thermal mixing occurs as predicted, that chlorine releases are controlled within those discharge concentrations evaluated, and that effects on aquatic biota and water quality due to plant operation are no greater than predicted.

Aquatic issues are addressed by the effluent limitations, and monitoring requirements are contained in the effective NPDES permit issued by the State of Michigan, Department of Natural Resources. The NRC will rely on this agency for regulation of matters involving water quality and aquatic biota.

### 2.2 Terrestrial Issues

1. Potential impacts on the terrestrial environment associated with drift from the mechanical draft cooling towers. (FES-OL addendum Section 6.3)

2. Potential increase in fogging associated with operation of the mechanical draft cooling towers. (FES-OL addendum Section 6.3).
3. The need for controlled used of herbicides on transmission rights-of-way. (FES-OL addendum Sections 6.3.3)

NRC requirements with regard to the 3 terrestrial issues are specified in Subsection 4.2 of this EPP.

### 3.0 Consistency Requirements

#### 3.1 Plant Design and Operation

The licensee may make changes in station design or operation or perform tests or experiments affecting the environment provided such changes, tests or experiments do not involve an unreviewed environmental question, and do not involve a change in the Environmental Protection Plan. Changes in plant design or operation or performance of tests or experiments which do not affect the environment are not subject to the requirements of this EPP. Activities governed by Section 3.3 are not subject to the requirements of this section.

Before engaging in additional construction or operational activities which may affect the environment, the licensee shall prepare and record an environmental evaluation of such activity. When the evaluation indicates that such activity involves an unreviewed environmental question, the licensee shall provide a written evaluation of such activities and obtain prior approval from the Director, Office of Nuclear Reactor Regulation. When such activity involves a change in the Environmental Protection Plan, such activity and change to the Environmental Protection Plan may be implemented only in accordance with an appropriate license amendment as set forth in Section 5.3.

A proposed change, test or experiment shall be deemed to involve an unreviewed environmental question if it concerns (1) a matter which may result in a significant increase in any adverse environmental impact previously evaluated in the final environmental statement (FES) as modified by staff's testimony to the Atomic Safety and Licensing Board, supplements to the FES, environmental impact appraisals, or in any decisions of the Atomic Safety and Licensing

Board; or (2) a significant change in effluents or power level [in accordance with 10 CFR Part 51.5(b)(2)] or (3) a matter not previously reviewed and evaluated in the documents specified in (1) of this Subsection, which may have a significant adverse environmental impact.

The licensee shall maintain records of changes in facility design or operation and of tests and experiments carried out pursuant to this Subsection. These records shall include a written evaluation which provide bases for the determination that the change, test, or experiment does not involve an unreviewed environmental question nor constitute a decrease in the effectiveness of this EPP to meet the objectives specified in Section 1.0. The licensee shall include as part of his Annual Environmental Operating Report (per Subsection 5.4.1) brief descriptions, analyses, interpretations, and evaluations of such changes, tests and experiments.

### 3.2 Reporting Related to the NPDES Permits and State Certifications

Violations of the NPDES Permit or the State certification (pursuant to Section 401 of the Clean Water Act) shall be reported to the NRC by submittal of copies of the reports required by the NPDES Permit or certification.

Changes and additions to the NPDES Permit or the State certification shall be reported to the NRC within 30 days following the date the change is approved. If a permit or certification, in part or in its entirety, is appealed and stayed, the NRC shall be notified within 30 days following the date the stay is granted.

The NRC shall be notified of changes to the effective NPDES Permit proposed by the licensee by providing NRC with a copy of the proposed change at the same time it is submitted to the permitting agency. The notification of a licensee-initiated change shall include a copy of the requested revision submitted to the permitting agency. The licensee shall provide the NRC a copy of the application for renewal of the NPDES permit at the same time the application is submitted to the permitting agency.

- 3.3 Changes Required for Compliance with Other Environmental Regulations  
Changes in plant design or operation and performance of tests or experiments which are required to achieve compliance with other Federal, State, or local environmental regulations are not subject to the requirements of Section 3.1.

#### 4.0 Environmental Conditions

##### 4.1 Unusual or Important Environmental Events

Any occurrence of an unusual or important event that indicates or could result in significant environmental impact causally related to plant operation shall be recorded and promptly reported to the NRC within 24 hours by telephone, telegraph, or facsimile transmissions followed by a written report per Subsection 5.4.2. The following are examples: excessive bird impaction events, onsite plant or animal disease outbreaks, mortality or unusual occurrence of any species protected by the Endangered Species Act of 1973, fish kills, increase in nuisance organisms or conditions and unanticipated or emergency discharge of waste water or chemical substances.

No routine monitoring programs are required to implement this condition.

##### 4.2 Environmental Monitoring

###### 4.2.1 Meteorological Monitoring

A meteorological monitoring program shall be conducted in the vicinity of the plant site for at least two years after conversion to cooling towers to document effects of cooling tower operation on meteorological variables. Data on the following meteorological variables shall be obtained from the station network shown in Figure 4.2.1: precipitation, temperature, humidity, solar radiation, downcoming radiation, visibility, wind direction and wind speed. In addition, studies shall be conducted for at least two years to measure affects of cooling tower drift on vegetation by associated salt deposition, icing or other causes.

Observations shall be made of a series of sample vegetation plots, and chemical analyses shall be made of representative samples of vegetation, soil and collected moisture to establish relative amounts of drift at various locations and influences on plant life. The incidence of icing and fogging on nearby transportation arteries shall be determined. Noise measurements shall be taken with and without the cooling tower in operation at different locations on site and around the surrounding areas. The study program to assess the meteorological and terrestrial effects of cooling tower operation onsite and offsite shall be carried out as follows:

METEOROLOGICAL STUDY

	<u>Sample</u>	<u>Frequency</u>	<u>Objective</u>
(a)	Precipitation	Continuously	To determine if the c.t.* influence natural precipitation processes.
(b)	Temperature	Continuously	To establish c.t.* plume influences on temperature if any.
(c)	Relative Humidity	Continuously	To determine if the c.t.* plume produces an increase in R.H.
(d)	Total Solar Radiation	Continuously	To determine if the c.t.* plume inhibit total solar radiation.
(e)	Total Solar Plus Atmosphere Radiation	Continuously	To determine the presence of nocturnal c.t.* plume.
(f)	Visibility	Continuously	To detect the presence of fog.
(g)	Wind Direction	Continuously	To determine the direction of movement to the c.t.* plume and alterations in wind patterns.

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\*c.t. - cooling towers

## METEOROLOGICAL STUDY (Cont'd)

	<u>Sample</u>	<u>Frequency</u>	<u>Objective</u>
(h)	Wind Speed	Continuously	To determine if the c.t.* plume affect local wind speeds.
(i)	Icing	During winter months	To determine if c.t.* plume creates icing problems of nearby highways and roads.

### DRIFT STUDY

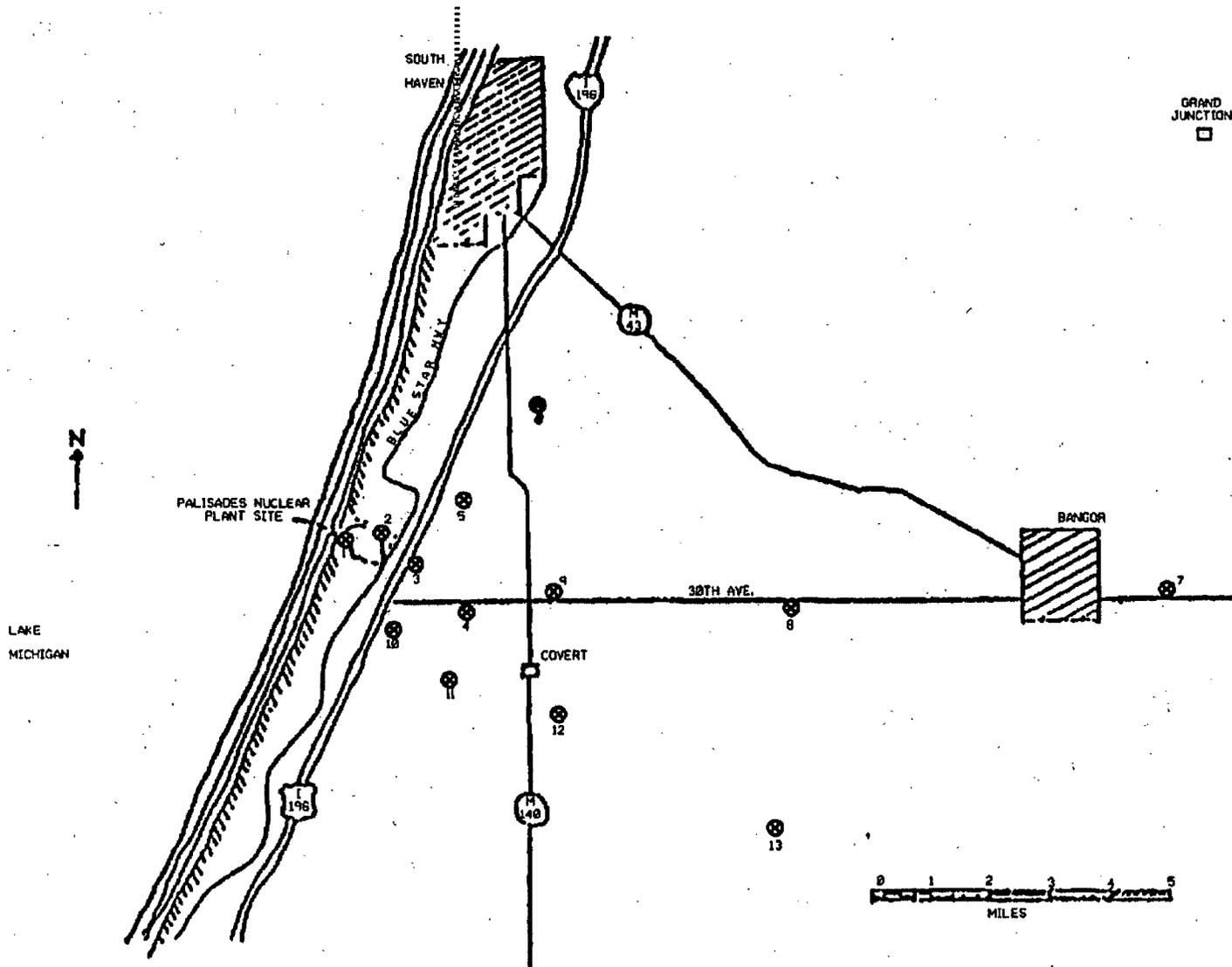
(a)	Precipitation and Analyzed for SO <sub>4</sub> and Ca	Monthly	To establish pattern and rate of drift deposited ions.
(b)	Analysis of Vegetational Composition	Survey 3 times per year (spring, summer, fall)	To determine if c.t.* drift is altering the vegetational composition.
(c)	Vegetational Chemical Analysis	Yearly	To determine if drift deposited elements are concentrating in vegetation.
(d)	Soil Chemical Analysis	Yearly	To determine if drift deposited elements are concentrating in soils.
(e)	Icing	Winter months	To determine if c.t.* drift (ice) is physically damaging to vegetation.

#### 4.2.2 Herbicide Application

The use of herbicides within the transmission corridor rights-of-way shall conform to the approved use of selected herbicides as registered by the Environmental Protection Agency and approved by State authorities and applied as directed by said authorities.

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\*c.t. - cooling towers



LOCATIONS OF CLIMATOLOGICAL STATIONS

January 22, 1981

Records shall be maintained in the appropriate division office concerning herbicide use. Such records shall include the following information: commercial and chemical names of materials used; concentration of active material in formulations diluted for field use; diluting substances other than water; rates of application; method and frequency of application; location; and the date of application. Such records shall be maintained for a period of 5 years and be made readily available to the NRC upon request. There shall be no routine reporting requirement associated with this condition.

5.0 Administrative Procedures

5.1 Review and Audit

The licensee shall provide for review and audit of compliance with the Environmental Protection Plan. The audits shall be conducted independently of the individual or groups responsible for performing the specific activity. A description of the organization structure utilized to achieve the independent review and audit function and results of the audit activities shall be maintained and made available for inspection.

5.2 Records Retention

Records and logs relative to the environmental aspects of plant operation shall be made and retained in a manner convenient for review and inspection. These records and logs shall be made available to NRC on request.

Records of modifications to plant structures, systems and components determined to potentially affect the continued protection of the environment shall be retained for the life of the plant. All other records, data and logs relating to this EPP shall be retained for five years or, where applicable, in accordance with the requirements of other agencies.

### 5.3 Changes in Environmental Protection Plan

Request for change in the Environmental Protection Plan shall include an assessment of the environmental impact of the proposed change and a supporting justification. Implementation of such changes in the EPP shall not commence prior to NRC approval of the proposed changes in the form of a license amendment incorporating the appropriate revision to the Environmental Protection Plan.

### 5.4 Plant Reporting Requirements

#### 5.4.1 Routine Reports

An Annual Environmental Operating Report describing implementation of this EPP for the previous year shall be submitted to the NRC prior to May 1 of each year. The initial report shall be submitted prior to May 1 of the year following issuance of the operating license. The period of the first report shall begin with the date of issuance of the operating license.

The report shall include summaries and analyses of the results of the environmental protection activities required by Subsection 4.2 of this Environmental Protection Plan for the report period, including a comparison with preoperational studies, operational controls (as appropriate), and previous nonradiological environmental monitoring reports, and an assessment of the observed impacts of the plant operation on the environment. If harmful effects or evidence of trends towards irreversible damage to the environment are observed, the licensee shall provide a detailed analysis of the data and a proposed course of action to alleviate the problem.

The Annual Environmental Operating Report shall also include:

- (a) A list of EPP noncompliances and the corrective actions taken to remedy them.
- (b) A list of all changes in station design or operation, tests, and experiments made in accordance with Subsection 3.1 which involved a potentially significant unreviewed environmental issue.
- (c) A list of nonroutine reports submitted in accordance with Subsection 5.4.2.

In the event that some results are not available by the report due date, the report shall be submitted noting and explaining the missing results. The missing data shall be submitted as soon as possible in a supplementary report.

## 5.4.2 Nonroutine Reports

A written report shall be submitted to the NRC within 30 days of occurrence of nonroutine event. The report shall (a) describe, analyze, and evaluate the event, including extent and magnitude of the impact and plant operating characteristics, (b) describe the probable cause of the event, (c) indicate the action taken to correct the reported event, (d) indicate the corrective action taken to preclude repetition of the event and to prevent similar occurrences involving similar components or systems, and (e) indicate the agencies notified and their preliminary responses.

Events reportable under this subsection which also require reports to other Federal, State or local agencies shall be reported in accordance with those reporting requirements in lieu of the requirements of this subsection. The NRC shall be provided a copy of such report at the time it is submitted to the other agency.