

# MARSHFIELD CLINIC

DEPARTMENT of RADIOLOGY  
Radiation Physics  
(715) 387-7637

David D. Loshek, Ph.D.  
Lois Rutz, M.S.

48-10966-03  
030-08688

July 7, 1982

Licensing Division  
U.S. Nuclear Regulatory Commission  
Region III  
799 Roosevelt Rd.  
Glen Ellyn, IL 60137

Applicant.....
Check No. 006811
Amount/Fee Category 40-7B
Type of Fee. Amend
Site Check Rec'd. 8/24/82
Received By. Jackson

Gentlemen:

In Consideration of NUREG-0656, as well as an evaluation of our own work handling policy, we hereby request that our byproduct license #48-10966-03 be amended as follows:

In Item 15, p. 1, insert a new paragraph as indicated below;

...the material will be transferred.

"Whenever possible the isotopes C-14, H-3, I-125 in low specific activity form will be disposed of by incineration in the hospital incinerator. H-3 will be primarily in the form of liquid scintillation wastes and C-14 in the form of labelled sugar substrates used for blood bacterial analysis (BACTEC vials). I-125 would be in the form of LSA wastes such as paper counter covers, pipettes, test tubes, gloves, etc. On some occasions we may also wish to dispose of absorbed liquids, particularly if they contain chemical or biological materials which would prevent their release into the sewer, but which would be destroyed during incineration."

(end of addition)

The hospital incinerator is an Econotherm, double burn down incinerator with the following characteristics:

Double burndown in two chambers.  
Burn temperature: Chamber 1 - 1700°F.  
Chamber 2 - 3400°F.  
Total CFM at mouth of stack - 36100 CFM.  
Stack height - 150 feet.  
Total running time - 16 hours/day.  
5 days/week.

8507290022 850628  
REG3 LIC30  
48-10966-03 PDR

CONTROL NO. 06716

AUG 2 1982

REC-111

RECEIVED BY LFMB	
Date.	8/16/82
Log.	JAC/EC
By..	Jackson
Orig. To.	
Date Rec'd.	8/25/82

The mouth of the stack is 76 feet above the roof of the building. There are no air inlets within this 76 feet.

Anticipated disposal would be weekly with an average activity disposed per week as follows:

C-14	1000 uCi/week
I-125	1 uCi/week
H-3	25 uCi/week

Based on a conservative 40 hour week of incinerator use ( $\frac{1}{2}$  that anticipated) the maximum concentration at the mouth of the stack will be:

C-14	$4 \times 10^{-10}$ uCi/ml
I-125	$4 \times 10^{-13}$ uCi/ml
H-3	$1 \times 10^{-11}$ uCi/ml

Total effluent at the stack as a fraction of 10% the MPC is:

$$\frac{4 \times 10^{-10}}{1 \times 10^{-8}} + \frac{4 \times 10^{-13}}{8 \times 10^{-12}} + \frac{1 \times 10^{-11}}{2 \times 10^{-8}} = .09$$

The maximum number of burns per year will be 65.

The operating procedure will be as follows:

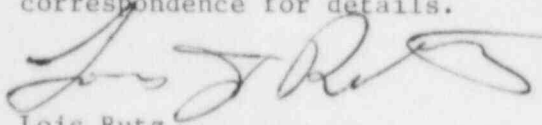
Maintenance staff will pick up the waste at the user's site. Wastes will be double bagged or otherwise contained to prevent spillage during transport to the incinerator. The isotope users will be responsible for maintaining disposal logs for their own labs, however, standard incinerator policy provides for a log of each burn. Thus an element of redundancy is built into the procedure. Workers will transport wastes directly to the incinerator where they will be mixed with other trash and burned immediately.

All ash is removed from the incinerator by a vacuum system and stored in a silo. When the silo is full, the ash (about 6 tons) is again transferred by a closed system to a truck and hauled to the landfill. Assuming that the silo is emptied once a month, the specific concentration of the ash if all radioactivity remained would be about  $7 \times 10^{-4}$  uCi/g. Since it is expected that better than 99% of the radioactive material will go into the effluent it is not certain that our instruments will be able to detect any residual radioactivity. However, at least initially an attempt will be made to analyze the ash just after a routine burn. A sample will be taken, weighed, and counted in both a liquid scintillator counter and a crystal well counter.

Prior to beginning the incineration program all maintenance personnel involved in the handling of radioactive wastes will be instructed in basic radiation safety as well as relevant NRC regulations. Workers will be instructed to wear gloves, to mix the radioactive wastes with other trash, and to dispose of their gloves with each use. They will receive an annual inservice and be provided a set of written safety guidelines (see attached).

The RSO will supervise any non-routine burns.

State and local authorities have been advised of our intent to burn hazardous wastes and the incinerator program is under continual review by the Wisconsin DNR and the local government. See attached correspondence for details.



Lois Rutz  
Radiation Safety Officer

sjd

enclosures (2)

Guidelines for Safe Handling  
of Radioactive Trash

The radioactive materials to be incinerated are combined with paper, glassware, absorbents, plastics, and petroleum solvents. They should be bagged or boxed so that they will not spill or drip during transport to the incinerator. With each transport, the following guidelines should be observed:

1. Wear disposable rubber gloves.
2. Inspect each package for breaks or leaks. If the package is not intact, do not collect it. Inform the person at the pick-up site of the defect.
3. Transport directly to the incinerator.
4. Mix wastes with other trash as you place in the incinerator.
5. Dispose of your gloves with the trash.
6. Do not eat or smoke while handling this material.  
Since the solvents are extremely combustible this is very important.
7. Should a package break or spill during transport notify your supervisor and/or the Radiation Safety Office (7787) immediately.
8. Should you become contaminated wash with soap and water and notify your supervisor and the Radiation Safety Office (7787).

CONTROL NO. 06716



State of Wisconsin

DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny  
Secretary

February 9, 1982

BOX 7921  
MADISON, WISCONSIN 53707

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

IN REPLY REFER TO: 4530

Mr. Richard J. Carlson  
St. Joseph's Hospital  
611 St. Joseph Avenue  
Marshfield, WI 54449

Dear Mr. Carlson:

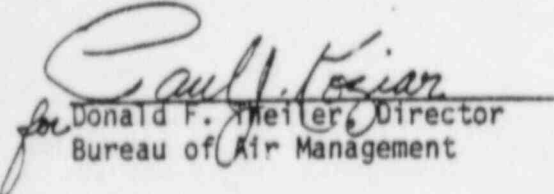
Your application for an air pollution control permit has been processed in accordance with Section 144.392, Wisconsin Statutes.

The enclosed permit is issued to provide authorization for your source to construct and operate in accordance with the requirements and conditions set forth within Parts I and II of the permit. Please read it carefully. A release for permanent operation (construction release) will be issued after verification that the source was constructed (or modified, or replaced, or reconstructed) and initially operated according to the plans and specifications as approved by the Department and that it will continue to operate in conformity with the conditions of the permit.

The conditions contained within this permit may be modified as a result of rulemaking required of the Department as a result of Chapter 144, Wisconsin Statutes or the adoption of standard permit forms and procedures which may differ from this interim document. At the time of such modification, permits reflecting these changes will automatically be issued to your source superseding this interim form.

This permit, or a copy, should be available for inspection upon request. Questions about this permit should be directed to the Bureau of Air Management, P.O. Box 7921, Madison, Wisconsin 53707, (608) 266-7718.

STATE OF WISCONSIN  
DEPARTMENT OF NATURAL RESOURCES

  
for Donald F. Theiler, Director  
Bureau of Air Management

cc: Air Enforcement Branch - EPA, Region V  
North Central District Air Program

1556P

(Rev. 7/27/81)

CONTROL NO. 00016

AIR POLLUTION CONTROL PERMIT

ATTAINMENT AREA MINOR SOURCE

EI FACILITY NO. N/A PERMIT NO. MIA-10-KAM-81-72-165  
STACK NO.(S). N/A TYPE: PERMIT TO CONSTRUCT & OPERATE  
SOURCE NO.(S). N/A

PERMISSION TO COMMENCE CONSTRUCTION ENDS EIGHTEEN (18) MONTHS FROM THE DAY THIS PERMIT IS ISSUED. ONCE A RELEASE FOR PERMANENT OPERATION HAS BEEN ISSUED, THIS OPERATING PERMIT IS PERMANENT UNLESS ALTERED, REVOKED OR SUSPENDED.

In compliance with the provisions of Chapter 144, Wisconsin Statutes, and Chapters NR 154 and NR 155, Wisconsin Administrative Code,

Name of Source: St. Joseph's Hospital

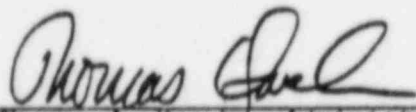
Street Address: 611 St. Joseph Ave.  
Marshfield, WI 54449

Principal Executive Officer & Title: Richard J. Carlson, Sr. Vice-President

is authorized and required to construct and operate a Johnston Boiler Model No. 522-SWHAGG and an Econo-Therm Model CA-1500 incinerator in accordance with the emission limitations, monitoring requirements and other conditions set forth in Parts I and II hereof, and in conformity with the plans and specifications dated September 11, 1981 and September 16, 1981 and as approved herein.

Dated at Madison, Wisconsin this 9 day of February, 1982.

STATE OF WISCONSIN  
DEPARTMENT OF NATURAL RESOURCES  
For the Secretary

By   
Thomas A. Kroehn, Administrator  
Division of Environmental Standards

PART I  
SPECIFIC PERMIT CONDITIONS

A. Emission Limitations

1. Incinerator alone

Pollutant	Applicable		Applicable Wisconsin Adm. Code or Statute	Limitation Requirement
	Yes	No		
Particulates	X		Sec. NR 154.11(4)(a)1., Wis. Adm. Code	0.15 pounds per million BTU heat input
Sulfur Dioxide		X		
Organic Compounds		X		
Nitrogen Dioxide		X		
Carbon Monoxide		X		
Visible Emissions (Opacity)	X		Sec. NR 154.11(6)(a)1., Wis. Adm. Code	#1 of Ringelmann Chart or 20% opacity
Malodorous Emissions		X		
Hazardous Substances: (Specify)		X		
Other: (Specify)		X		

2. New Boiler alone

Pollutant	Applicable		Applicable Wisconsin Adm. Code or Statute	Limitation Requirement
	Yes	No		
Particulates	X		Sec. NR 154.11(4)(a)1., Wis. Adm. Code	0.15 pounds per million BTU heat input
Sulfur Dioxide		X		
Organic Compounds		X		
Nitrogen Dioxide		X		
Carbon Monoxide		X		
Visible Emissions (Opacity)	X		Sec. NR 154.11(6)(a)1., Wis. Adm. Code	#1 of Ringelmann Chart or 20% opacity
Malodorous Emissions		X		
Hazardous Substances: (Specify)		X		
Other: (Specify)		X		

3. Incinerator and New Boiler

Pollutant	Applicable		Applicable Wisconsin Adm. Code or Statute	Limitation Requirement
	Yes	No		
Particulates	X		Sec. NR 154.11(4)(a)1., Wis. Adm. Code	0.15 pounds per million BTU heat input
Sulfur Dioxide		X		
Organic Compounds		X		
Nitrogen Dioxide		X		
Carbon Monoxide		X		
Visible Emissions (Opacity)	X		Sec. NR 154.11(6)(a)1., Wis. Adm. Code	#1 of Ringelmann Chart or 20% opacity
Malodorous Emissions		X		
Hazardous Substances: (Specify)		X		
Other: (Specify)		X		

B. Other Specific Conditions

1. Initial Operation Notification

The permittee shall inform the Wisconsin Department of Natural Resources, North Central District Air Program, Box 369, Wisconsin Rapids, WI 54494 thirty (30) days prior to initial operation of the source covered by this permit. Furthermore, the permittee shall send the District construction progress reports every 30 days until a release for permanent operation is granted.

2. Release for Permanent Operation

This permit does authorize an initial operation period of 60 days for equipment shake-down, testing and Department evaluation of operation to assure conformity with the permit conditions. Permanent operation of the source(s) covered by this permit after the initial operation period is prohibited until a release has been issued by the Department.

3. Coal shall not be used as emergency or reserve fuel for more than fifteen (15) days in any one calendar year. Upon start up of this reserve fuel usage, notification must be given to the Department, which may or may not give approval for continued emergency fuel use.
4. The maximum allowable stack opacity under any operating scheme shall be 20%.
5. The maximum allowable particulate emissions for the stack shall be calculated using the following equation:

$$L = \left( (A+B+C+D) 0.15 \frac{\text{lb-PM}}{10^6 \text{ BTU heat input}} + (E) 0.60 \frac{\text{lb-PM}}{10^6 \text{ BTU heat input}} \right) / (A+B+C+D+E)$$

Where

- L = emission limitation for the stack in pounds of particulate per million BTU heat input to the stack  
A = incinerator heat input to the stack in million BTU heat input to the stack per hour  
B = new boiler heat input to the stack in million BTU heat input to the stack per hour  
C = existing natural gas fired boiler heat input to the stack in million BTU heat input to the stack per hour.

D = existing oil fired boiler heat input to the stack in million BTU  
heat input to the stack in million BTU heat input to the stack  
per hour

E = existing coal fired boiler heat input to the stack in million BTU  
heat input to the stack per hour

6. Only wastes for which the incinerator has been designed shall be disposed of through the unit. Manufacturer's recommendations shall be strictly observed.
7. Only properly trained personnel shall be allowed to operate the incinerator. Manufacturer's operating and maintenance instructions shall be followed at all times and visibly posted in the vicinity of the incinerator.
8. The incinerator shall be operated and maintained in a clean and safe manner.

1556P

PART II  
GENERAL PERMIT CONDITIONS  
FOR DIRECT STATIONARY SOURCES

A. Scope

This permit is valid only for the structure, building, facility, equipment or operations specifically identified herein. All emissions authorized hereby shall be consistent with the terms and conditions of Parts I and II of this permit.

B. Prevention of Air Pollution

No person may cause, allow or permit the emissions of any air contaminant into the ambient air from a source subject to this permit which substantially contribute to the exceeding of an air standard or which cause air pollution.

C. Notification Requirements

Pursuant to sec. 144.394(3), Wis. Stats. and section NR 154.06(1) and (2)(f), Wis. Adm. Code, the Department shall be notified of the following events:

<u>Event</u>	<u>Timing</u>
Hazardous substance air spill	Immediate-call: (608)266-3232
Malfunction or event not reported in advance which causes or may cause any violation of an emission limitation.	Within 8 hours of onset
Noncompliance with any other condition specified in this permit	Written notification within 5 days identifying noncompliance, cause, duration, and steps taken to prevent reoccurrence.

D. Advance Notice of Startup or Shutdown

The permittee shall report to the Department in advance schedules for planned shutdown and startup of air pollution control equipment and the measures to be taken to minimize the down time of the control equipment. Scheduled maintenance or startup of other equipment which causes an emission limit to be exceeded shall also be reported in advance to the Department. Advance reporting pursuant to this permit condition or section NR 154.06(2)(h), Wis. Adm. Code, shall not relieve any person from the duty to comply with any applicable emission limitations.

(Rev. 7/21/81)

E. Right of Entry

Pursuant to sec. 144.34, Wis. Stats., the permittee shall allow authorized representatives of the Department of Natural Resources to enter upon the permittee's premises; to have access to and copy any records required to be kept under the terms and conditions of this permit; and to make any inspection necessary to ascertain compliance.

F. Malfunction Prevention and Abatement Plans

Pursuant to section NR 154.06(9), Wis. Adm. Code, the owner or operator of any direct or portable source which may emit hazardous substances or emits more than 15 pounds in any day or 3 pounds in any hour of carbon monoxide, particulate matter, hydrocarbons, sulfur oxides, nitrogen dioxide or photochemical oxidants shall prepare a written malfunction prevention and abatement plan to prevent, detect and correct malfunctions or equipment failures which may cause any emission limitation to be violated or which may cause air pollution. Any such plan shall be carried out by the owner or operator. The plan shall be updated as needed and is subject to department review, approval and amendment.

G. Episode Plans

Pursuant to section NR 154.20(2), Wis. Adm. Code, if the source(s) covered by this permit emits 0.25 tons per day or more of carbon monoxide, particulate matter, hydrocarbons, sulfur oxides, nitrogen dioxide or photochemical oxidants, the permittee shall prepare an emission control action program consistent with good industrial practice and safe operating procedures, for reducing the emission of air contaminants into the outdoor atmosphere during periods of an air pollution alert, air pollution warning or air pollution emergency. The emission control action program shall be in writing, available on the premises for inspection and subject to review and approval by the Department on request.

H. Permit Alteration, Revocation, Suspension

After notice and opportunity for a hearing, as provided in sec. 144.395, Wis. Stats., this permit may be altered, suspended, or revoked in whole or in part for cause, including but not limited to, the following:

1. A significant or recurring violation of any term or condition of this permit;
2. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;
3. A change in any applicable rule; or
4. Failure to pay any required permit fees.

I. Civil Liability

Nothing in this permit shall be construed to relieve the permit holder from civil penalties under sec. 144.426, 144.96 or 144.99, Wis. Stats., for violation of the terms or conditions of this permit, or for violation of secs. 144.30 to 144.426, 144.76 and 144.96, Wis. Stats., or of any rule or any special order issued under those sections.

J. Other Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or to relieve the permit holder from any responsibilities, liabilities, or penalties established pursuant to any other applicable Federal, State, or local law or regulation. The issuance of this permit does not convey any property rights in either real or personal property, nor does it authorize any injury to private property or any invasion of personal rights.

K. Records Retention

All records and information resulting from any monitoring activities required by this permit shall be retained by the permittee for a minimum of three years (or longer if requested by the Department) pursuant to section NR 154.06(3), Wis. Adm. Code.

L. Reporting

Reports required by Part I of this permit, if any, shall be signed by an authorized representative of the source.

M. Confidential Information

Except for information determined to be confidential under sec. 144.33, Wis. Stats., any information or reports received by the Department in the permit application process, or subsequently obtained, will be available for public inspection at the offices of U.S. Environmental Protection Agency and the Department of Natural Resources.

N. Notification of Transfer

In the event of a transfer of control of operation or ownership of the source, the permittee, prior to such transfer, shall notify its successor by letter of the need for a permit. A copy of this letter shall be forwarded to the Department.

(Rev. 7/21/81)

O. Nonexempt Modifications

"Modification" means any change in the physical size or method of operation of a stationary source which:

- (1) increases the potential amount of emissions of an air contaminant;
- (2) results in the emission of an air contaminant not previously emitted;  
or
- (3) results in the violation of an ambient air increment.

Any modification of the source(s) subject to this permit is prohibited unless the modification is an exempt modification or the modification is authorized by a permit. The following changes in method of operation are exempt modifications if the specified change does not cause or exacerbate the violation of an ambient air quality standard or increment and if the change in method of operation does not result in the violation of any other term or condition of this permit:

1. An increase in production rate if that increase does not exceed the operating design capacity of the source.
2. An increase in the hours of operation of the source.
3. Use of an alternate fuel or raw material if the source is designed to burn or use the alternate fuel or raw material and if that information is included in the plans, specifications and other information submitted under sec. 144.392(2), Wis. Stats. or under sec. 144.39(1), Wis. Stats. (1977).
4. Resumption of operation of a source after a period of closure if the existing equipment was continuously included in the source inventory as an existing source covered by plans under sec. 144.31(1)(f), Wis. Stats.
5. A change in ownership of the source.

P. Reconstruction or Replacement

Unless authorized by a permit, replacement of the source(s) covered by this permit is prohibited. If the source(s) covered by this permit is a nonattainment major source, reconstruction may also be prohibited unless authorized by a permit.

Q. Circumvention

Pursuant to section NR 154.06(8)(a), Wis. Adm. Code, the installation or use of any article, machine, equipment, process, or method, which conceals an emission which would otherwise constitute a violation of an applicable rule is prohibited unless written approval has been obtained from the Department. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance and the unnecessary separation of an operation into parts to avoid coverage by a rule that applies only to operations larger than a specified size.

R. Operating Permit Renewal

Certain operating permits for which a complete application was received prior to April 30, 1980 may be subject to renewal five years after issuance. An operating permit may be renewed subject to the rules in effect at the time of application for renewal. Renewal applications shall be filed in accordance with sec. 144.397, Wis. Stats., (as affected by Ch. 34, Laws of 1979). An operating permit shall continue to be valid during any review time associated with renewal, provided the permit holder applies at least 180 days prior to the expiration date in accordance with sec. 144.397, Wis. Stats., (as affected by Ch. 34, Laws of 1979).

S. Forfeitures

In addition to other penalties or remedies, sec. 144.426, Wis. Stats., provides that any person who violates this permit shall forfeit not less than \$10 nor more than \$25,000 for each violation. Each day of continued violation is a separate offense.

T. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

(Rev. 7/21/81)

CONTROL NO. 06716

## INSTRUCTIONS TO SENDER:

REMOVE YELLOW COPY FOR YOUR FILE.  
SEND REMAINDER OF FORM INTACT WITH CARBONS TO PERSON ADDRESSED.

154610

## INSTRUCTIONS TO PERSON ADDRESSED:

WRITE REPLY AT BOTTOM OF FORM; REMOVE CARBON FROM FORM.  
RETURN PINK TO SENDER, RETAIN WHITE FOR YOUR FILE.

## REPLY MESSAGE

FORM AD-18

## STATE OF WISCONSIN

## FROM

Kris McKinney  
Case Engineer  
Bureau of Air Management - GEF II

## SUBJECT

Publication of Notice for Public  
Comments for Installation of  
an incinerator and waste heat  
boiler at St. Joseph's Hospital,  
Marshfield, WI

## TO:

Richard Carlson, Asst.-Admin.  
St. Joseph's Hospital  
611 St. Joseph Ave.  
Marshfield, WI 54449

## DATE

December 9, 1981

## MESSAGE

Per your request, attached is the Notice for public comments that must be published as  
class 1 legal notice for one day in:

News-Herald

111 W. Third Street

Marshfield, WI 54449

The Bureau of Air Management, Department of Natural Resources will not be responsible  
for the publication expenses in this case. All expenses must be paid by your company.  
All we need is a notarized proof of publication. The permit will not be issued unless  
we have this proof.

SIGNED

*Kris A. McKinney*

## REPLY

DATE

*To: Don Wolfgang*  
*From: R. Carlson*  
*5UP*

SIGNED

THIS COPY FOR PERSON ADDRESSED



CONTROL NO. 06716



State of Wisconsin

DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny  
Secretary

BOX 7921  
MADISON, WISCONSIN 53707

December 8, 1981

IN REPLY REFER TO: 4530

Mr. Donald Wolfgram  
St. Joseph's Hospital  
611 St. Joseph Ave.  
Marshfield, WI 54449

Dear Mr. Wolfgram:

The Engineering and Surveillance Section, Bureau of Air Management of the Department of Natural Resources has preliminarily reviewed the air pollution control permit application regarding the proposed incinerator and boiler to be located at 611 St. Joseph Avenue.

The Section has recommended tentative conditional approval of the project and will now accept public comments on the proposed installation as required by Section 144.392(6) and (7), Wisconsin Statutes. Comments will be received for 30 days after publication of a Department notice. The public input, if any, will also be reviewed to note if significant public interest in the project exists and whether a public hearing is warranted. If a hearing is warranted, it would be held within 60 days from the end of the public comment period. Finally, all public input will be used to render a final decision within another 60 days unless compliance with Wisconsin's Environmental Policy Act requires a longer time.

Please be advised that this is only a preliminary determination and approval. Construction (or modification or replacement or reconstruction) and operation cannot commence until a permit is received from the Department. If you have any questions regarding this matter, please feel free to contact me at 608-267-7542.

Sincerely,  
Bureau of Air Management

*Kris A. McKinney*

Kris A. McKinney, Review Engineer  
Engineering & Surveillance Section

KAM:ucd/0725Y

cc: North Central District Air Program

BEFORE THE  
DEPARTMENT OF NATURAL RESOURCES  
BUREAU OF AIR MANAGEMENT

Wisconsin Department of Natural Resources ) MIA-10-KAM-81-72-165  
Air Pollution Control Permit to Construct an )  
Air Contaminant Source at Marshfield, Wood, Wisconsin)

St. Joseph's Hospital, 611 St. Joseph Ave. has submitted to the Department of Natural Resources (DNR) a permit application including plans and specifications for construction and operation of an Econo-Therm Model CA-1500 incinerator and a Johnston Boiler Model No. 522-SWHAGG. The Bureau of Air Management of the Department has analyzed these materials and has preliminarily determined that the project should meet applicable criteria for permit approval as stated in Wisconsin Statutes 144.393, including both the emission limits and the ambient air standards and should, therefore, be approved. In addition, the Department has made a preliminary determination that an Environmental Impact Statement will not be required before approving this proposal. This tentative approval does not constitute approval from other DNR sections which may also require a review of the project.

The DNR hereby solicits written comments from the public regarding the proposed incinerator and boiler. These comments will be considered in the DNR's final decision regarding this project. Information, including plans and the DNR's preliminary analysis regarding this proposal, are available for public inspection at the Department of Natural Resources Headquarters, GEF II Building, Third Floor, 101 S. Webster Street, Madison, Wisconsin and at the North Central District Air Program, Box 818, Rhinelander, WI 54501.

Interested persons wishing to comment on the proposal and preliminary determination should submit written comments within 30 days to:

Wisconsin Department of Natural Resources  
Bureau of Air Management  
P.O. Box 7921  
Madison, Wisconsin 53707

Attn: Kris. A. McKinney

A public hearing may be requested by individuals if the project is of significant concern to them. The request for hearing should indicate the interest of the party filing the request and reasons why a hearing is warranted. The Department may then hold a public hearing if it determines that there is a significant public interest in holding a hearing.

Dated at Madison, Wisconsin December 17, 1981

STATE OF WISCONSIN  
DEPARTMENT OF NATURAL RESOURCES  
For the Secretary

By Donald F. Theiler  
Donald F. Theiler, Director  
Bureau of Air Management

PRECONSTRUCTION REVIEW AND PRELIMINARY DETERMINATION  
ON A PROPOSED CONSTRUCTION OF AN  
ECONO-THERM MODEL CA-1500 INCINERATOR AND  
A JOHNSTON BOILER MODEL NO. 522-SWHAGG  
FOR  
ST. JOSEPH'S HOSPITAL  
TO BE LOCATED AT  
611 ST. JOSEPH AVENUE  
MARSHFIELD/WOOD COUNTY, WISCONSIN

This review was performed by the Wisconsin Department of Natural Resources, Bureau of Air Management in accordance with Sections 144.391 to 144.394, Wisconsin Statutes. This review is for a minor source located in (or significantly affecting) an area which is attainment/unclassified for all pollutants.

THIS IS ONLY A PRELIMINARY DETERMINATION. CONSTRUCTION (OR MODIFICATION) AND OPERATION CANNOT COMMENCE UNTIL THE APPLICANT HAS RECEIVED A PERMIT FROM THE DEPARTMENT.

NEW SOURCE REVIEW #MIA-10-KAM-81-72-165

Wisconsin Department of Natural Resources  
Bureau of Air Management  
P. O. Box 7921  
Madison, Wisconsin 53707

12/9/81

INTRODUCTION

Section 144.391, Wis. Stats., and Section NR 154.04, Wis. Adm. Code set forth the sources that would require an air pollution control permit prior to construction or modification and operation. Sources subject to the requirements must submit a permit application to the Department of Natural Resources, Bureau of Air Management. The application is then reviewed following the provisions set forth in Sections 144.392 to 144.394, Wis. Stats. The criteria for permit issuance vary depending on whether the source is major or minor and whether the source is locating in or significantly affecting an attainment or nonattainment area. The permit must be received by the source prior to start of construction (or modification) and operation.

Subject sources are to be reviewed for the air pollution control technology proposed to be installed and for their impact upon the air quality. This is to insure compliance with all applicable rules and statutory requirements. The plan review will show why the source(s) should be approved, conditionally approved, or disapproved. It will encompass emission calculations and air quality analysis using U.S. EPA models, if applicable. Emissions from volatile organic compound (VOC) sources and small sources whose emissions are known to be insignificant are normally not modelled. As a precautionary note, the emission estimates are based on U.S. EPA emission factors (AP-42) or theoretical data and can vary from actual stack test data, which are often times lower than the estimates. In addition, the U.S. EPA diffusion model(s) used in applicable cases gives conservative estimates of the incremental contribution from the source(s) subject to review.

TYPE OF PERMIT

Permit to construct and operate an Econo-Therm Model CA-1500 incinerator and a Johnston Boiler Model No. 522-SWHAGG.

Dates of Submittal: September 11, 1981  
September 16, 1981

Owner/Operator: St. Joseph's Hospital  
611 St. Joseph Ave., Marshfield, WI 54449

Contact: Donald Wolfgram  
Director of Buildings and Grounds  
(715) 387-7117

Principal Executive Officer: Donald Wolfgram  
Director of Buildings and Grounds  
(715) 387-7117

Submitted By: Robert D. Smith  
Econo-Therm Energy Systems Corp.  
11535 K-Tel Drive, Minnetonka, MN 55343

SOURCE DESCRIPTION

St. Joseph's Hospital in Marshfield, WI, proposes to construct and operate an Econo-Therm Model CA-1500 (controlled air) incinerator equipped with a natural gas fired afterburner and a Johnston Boiler Model No. 522-SWAGG. The incinerator will burn type "O" waste with a heating value of 8750 BTU/lb. The fuels used in the Johnston boiler will be No. 6 fuel oil (December-February) and natural gas (remainder of the year).

Incinerator Specifications

Econo-Therm Model CA-1500 (controlled air)  
Maximum Burning Rate = Actual Burning Rate = 800 lb/hr of type "O" waste  
equipped with one natural gas fired afterburner  
Auxiliary Fuel = natural gas  
Heat Input =  $7 \times 10^6$  Btu/hr

Boiler Specifications

Johnston Model No. 522-SWAGG  
Maximum Fuel Oil Burning Rate = 70 gal/hr  
Maximum Natural Gas Burning Rate = 11,000 ft<sup>3</sup>/hr  
Maximum Heat Input =  $10.75 \times 10^6$  Btu/hr

Stack Parameters (for new boiler, incinerator and existing boilers)

Height = 150 ft  
Diameter = 6 ft  
Exit Temp = 450°F  
Exit Velocity = 21.3 ft/sec  
Exit Flow Rate = 36,100 acfm

Anticipated Normal Operating Conditions

## 1) Incinerator

800 lb/hr, 10 hr/day, 365 days/year

## 2) New Boiler

## (a) fuel oil

54 gal/hr, 1,825 hr/yr (December-February)

## (b) natural gas

8,000 ft<sup>3</sup>/hr, 6,935 hr/yr (remainder of the year)

Existing Facility Emissions (based on fuel use from 1975-1981)

<u>Pollutant</u>	<u>TPY</u>
PM	65.99
SO <sub>2</sub>	49.96
CO	1.85
HC	0.90
NO <sub>2</sub>	13.81

SITE DESCRIPTION

The facility will be located in an attainment area for all criteria pollutants. The closest nonattainment area (TSP only) is about two miles from the proposed source. The new sources are located within a hospital complex which is on the northern outskirts of the City of Marshfield.

CONTROL TECHNOLOGY REVIEW

The incinerator is controlled air and capable of operating at high temperatures. It is equipped with a natural gas fired afterburner, so nearly complete combustion of the refuse is expected.

The new boiler is not equipped with any control hardware. However, since the fuels to be used are No. 6 oil and natural gas, emissions will be below the allowable emission limitation.

APPLICABLE LIMITATION

## (1) Incinerator Alone

<u>Pollutant</u>	<u>Applicable Wis. Adm. Code</u>	<u>Limitation</u>
Particulates	Section NR 154.11(4)(a)1.	0.15 pounds per million Btu heat input
Visible Emissions	Section NR 154.11(6)(a)1.	#1 of Ringelmann Chart or 20% Opacity

## (2) New Boiler Alone

<u>Pollutant</u>	<u>Applicable Wis. Adm. Code</u>	<u>Limitation</u>
Particulates	Section NR 154.11(4)(a)1.	0.15 pounds per million Btu heat input
Visible Emissions	Section NR 154.11(6)(a)1.	#1 of Ringelmann Chart or 20% Opacity

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## (3) Incinerator and New Boiler

<u>Pollutant</u>	<u>Applicable Wis. Adm. Code</u>	<u>Limitation</u>
Particulates	Section NR 154.11(4)(a)1.	0.15 pounds per million Btu heat input
Visible Emissions	Section NR 154.11(6)(a)1.	#1 of Ringelmann Chart or 20% Opacity

## (4) Incinerator, New Boiler, and One (1) Existing Natural Gas Fired Boiler

<u>Pollutant</u>	<u>Applicable Wis. Adm. Code</u>	<u>Limitation</u>
Particulates	Section NR 154.11(4)(a)1.	0.15 pounds per million Btu heat input
Visible Emissions	Section NR 154.11(6)(a)1.	#1 of Ringelmann Chart or 20% Opacity

## (5) Incinerator, New Boiler, One (1) Existing Oil Fired Boiler, and One (1) Existing Coal Fired Boiler

<u>Pollutant</u>	<u>Applicable Wis. Adm. Code</u>	<u>Limitation</u>
Particulates	Section NR 154.11(4)	0.20 pounds per million Btu heat input*
Visible Emissions	Section NR 154.11(6)(a)1.	#1 of Ringelmann Chart or 20% Opacity

\*This is a weighted emission limitation developed from section NR 154.11(4)(a)1. and section NR 154.11(4)(b)1.a., Wis. Adm. Code and using fuel usage data.

## (6) Incinerator, New Boiler, Two (2) Existing Oil Fired Boilers, and Two (2) Existing Coal Fired Boilers

<u>Pollutant</u>	<u>Applicable Wis. Adm. Code</u>	<u>Limitation</u>
Particulates	Section NR 154.11(4)	0.20 pounds per million Btu heat input*
Visible Emissions	Section NR 154.11(6)(a)1.	#1 of Ringelmann Chart or 20% Opacity

\*This is a weighted emission limitation developed from section NR 154.11(4)(a)1. and section NR 154.11(4)(b)1.a., Wis. Adm. Code and using fuel usage data.

EMISSION SUMMARY

Pollutant	Allowable			Actual			Potential		
	10 <sup>6</sup> Btu	lb/hr	tons/yr	10 <sup>6</sup> Btu	lb/hr	tons/yr	10 <sup>6</sup> Btu	lb/hr	tons/yr
PM*									
a) I	0.15	1.05	4.60	0.08	0.56	1.02	0.08	0.56	2.45
b) NB	0.15	1.61	7.05	0.04	0.34	1.49	0.15	1.60	6.99
c) I & NB	0.15	2.66	11.65	0.06	0.90	2.51	0.12	2.16	9.44
d) I & NB & EBG	0.15	7.99	34.99	0.04	1.07	6.22	0.06	3.28	14.37
e) I & NB & EBO & EBC	0.20	20.96	91.80	1.01	27.48	27.59	0.78	82.29	360.43
f) I & NB & 2 (EBO) & 2 (EBC)	0.20	39.26	171.96	1.38	54.06	51.84	0.84	162.42	711.40
SO <sub>2</sub>					3.91	15.90		22.65	99.23
CO					0.26	1.14		0.35	1.53
HC					0.06	0.28		0.08	0.37
NO <sub>2</sub>					5.39	23.59		8.16	35.75

\*Where: I = Incinerator

NB = New Boiler

EBG = Existing Boiler Gas-Fired (Post 1972)

EBO = Existing Boiler Oil-Fired (Post 1972)

EBC = Existing Boiler - Coal Fired (Pre-1972)

AIR QUALITY REVIEW

The purpose of the air quality review is to determine whether or not the allowable emissions from this proposed incinerator and new boiler will cause or contribute to a violation of the national ambient air quality standards (NAAQS) for particulates. A screening analysis was performed using a U.S. EPA reference model (PTIAX).

The predicted maximum 24-hr concentration for stability class 4 and a wind speed of 5 m/sec is 3.77  $\mu\text{g}/\text{m}^3$  at a distance of 2.5 km from the source. Since this concentration is less than the significance level of 5  $\mu\text{g}/\text{m}^3$  for particulates, there should not be a significant impact on the air quality of the area due to the operation of this source.

OTHER IMPACTS

No environmental impact assessment is required for this project since it does not have the potential to cause significant environmental effects and does not involve unresolved conflicts in the use of available resources.

DETERMINATION

The Bureau of Air Management, Wisconsin Department of Natural Resources has reviewed the materials submitted by Econo-Therm Energy Systems Corp. on behalf of St. Joseph's Hospital for their incinerator and boiler and has made a preliminary determination that:

- 1) The source can comply with all applicable rules and regulations.
- 2) The NAAQS shall not be jeopardized by the operation of this source.

Therefore, preliminary or tentative approval is granted for this project, subject to the following conditions:

- a. The use of coal as emergency or reserve fuel needed for meeting of high peak loads or other uses must be approved by the Department. Coal shall not be used as emergency or reserve fuel for more than fifteen (15) days in any one calendar year.
- b. Such reserve fuel must be specified in writing as emergency or reserve fuel by the Department.
- c. Upon start up of this reserve fuel usage, notification must be given to the Department which may or may not give approval for continued emergency fuel use.
- d. Only wastes for which the incinerator has been designed shall be disposed of through the unit. Manufacturer's recommendations shall be strictly observed.
- e. Only properly trained personnel shall be allowed to operate the incinerator. Manufacturer's operating and maintenance instructions shall be followed at all times. These instructions shall be visibly posted in the vicinity of the incinerator.
- f. The incinerator shall be operated and maintained in a clean and safe manner.

Review Engineer: Kris A. McKinney

Checked by: \_\_\_\_\_

Approved by: \_\_\_\_\_

0726Y

cc: North Central District Air Program

CONTROL NO. 06716

# MARSHFIELD CLINIC

Purchasing (715) 387-5291  
Accounts Payable (715) 387-5631

1000 North Oak Avenue  
Marshfield, Wisconsin 54449

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54642

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To: [ ]  
Licensing Division  
USNRC Region III  
799 Roosevelt Rd.  
GlenEllyn, IL 60137

Date: July 30, 1982

Confirmation of  
Telephone Order

SHIP TO: ☐ SAME Attn: Receiving Dept.

Ship to  
Arrive:

### Capital Equipment

### Clinic Tag

[illegible]

## TERMS AND CONDITIONS

This order is to be entered in accordance with prices, delivery and specifications shown above. All packages must have packing slips attached or enclosed.

Authorized By \_\_\_\_\_

Richard J. Walkush  
Richard J. Walkush, Purch. Director

Title