

RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
DIVISION OF AIR AND HAZARDOUS MATERIALS

RE: RENEWAL OF SULFUR BUBBLE  
AT THE  
UNIVERSITY OF RHODE ISLAND

A.P. FILE NO. 87-5-AP

DECISION

Introduction

On 5 March 1986 the University of Rhode Island (URI) requested the Division of Air and Hazardous Materials (the Division) to renew its sulfur emissions bubble. The bubble was first approved on 26 December 1983 and expired on 26 December 1986. The Division has proposed to approve the renewal. On 5 January 1987, in compliance with Air Pollution Control Regulation 8.3.2.2, the Division issued a Notice of Public Comment period. The notice was published in the Providence Journal and Evening Bulletin on 12 January 1987 (see Attachment 1). The comment period lasted until 13 February 1987. This Decision will respond to significant comments received and present the final disposition of the renewal request.

Response to Comments

A letter of comment was received from Katherine M. Spiratos of the Rhode Island Lung Association. Each of Spiratos' significant comments will be paraphrased followed by the Division's response.

Comment: A monitoring station should be established at the anticipated site of highest impact.

Response: The sulfur dioxide monitoring network currently operating in Providence, Pawtucket and East Providence and observations in South County from 1971-1973 show ambient air sulfur dioxide concentrations generally at 50% or less of

the standard. Modeling done for the original bubble application in 1983 showed worst case sulfur dioxide concentrations at about 60% of the standard. Because the ambient air standard is not being threatened, it is not prudent to expend the Department's limited monitoring resources in this area.

Comment: The bubble should be re-evaluated if federal or state legislation lowers the allowable sulfur emission rate.

Response: We agree and will add a clause to the approval which will allow changes required as a result of legislation.

Comment: The renewal of URI's bubble should be contingent on URI's ability and willingness to switch to low sulfur fuel during periods of high pollution or a shortfall of natural gas.

Response: We agree. A clause will be added to the final approval which will require URI to stop burning high sulfur oil at the request of the Division during an air pollution alert. The provisions of the bubble allow high sulfur oil to be used only when natural gas is also being burned.

Comment: Money URI saves by burning high sulfur fuel should be applied to implementing conservation measures.


Response: The Division has no authority under the bubble rule to specify the use of money saved by implementation of the rule.

#### Final Disposition

The request by URI to renew its sulfur emissions bubble will be approved. The approval will be granted as proposed in the draft approval (Attachment 2) with the following changes:

- A paragraph will be added which will allow changes in emission limitations as a result of changes in federal or state law.
- A paragraph will be added which will require URI to stop burning high sulfur oil at the request of the Division during an air pollution alert.

26 Feb 1987  
Date

  
Stephen Majkut, Supervising Engineer  
Division of Air and Hazardous  
Materials

Attachment 1: Affidavit of Publication  
Attachment 2: URI Emission Bubble - Draft Approval

URI-DEC/TG4

## URI Emission Bubble

The emission bubble renewal requested on 5 March 1986 by the University of Rhode Island (URI) is hereby approved with the following conditions:

1. That URI will operate its main heating plant in compliance with the Emission Limitations and Allowable Fuels found in Attachment I.
2. That URI agrees to notify the Division within 24 hours of the following: when the burning of high sulfur oil (above 1.0 percent) commences at the beginning of the heating season; when and if the power plant should curtail the burning of high sulfur oil or natural gas; when high sulfur oil burning begins again during the season after having been interrupted.
3. That URI will maintain records each day in which high sulfur oil is burned for each boiler operating. These records shall include the following parameters: fuel burned (2.2% sulfur, natural gas) firing rate (MMBtu/day) or steam rate (pounds/day) and shall be maintained for all periods in which oil with a sulfur content greater than 1.0% sulfur is being burned.
4. That URI will establish and maintain a blanket requisition allowing the purchase and delivery of fuel oil with a sulfur content of 1.0% by weight or less at any time during the year. This requisition will specify that delivery of 1.0% sulfur (by weight) fuel oil be delivered within 24 hours of the request by URI.



5. That the provisions of the 1983 approval letter will be incorporated into this Consent Agreement:
  - A. During those times of the year when both boilers #3 and #4 are operating (primarily winter), boiler #4 may burn high sulfur oil when boiler #3 is burning natural gas. If boilers #1 or #2 are operating, they must burn low sulfur oil.
  - B. During those times of the year when either boiler #3 or #4 is operating (primarily spring and fall), if boiler #3 or #4 is burning natural gas, either boiler #1 or #2 may burn high sulfur oil.
  - C. No burning of high sulfur oil is permitted during the summer or should an air pollution alert occur.
  - D. Whenever the burning of high sulfur oil is taking place, the boiler burning natural gas must be operating at a heat input rate at least equal to the boiler burning high sulfur oil.
6. This approval shall be in effect for the period of 26 December 1986 to 26 December 1989 provided the University of Rhode Island complies with the requirements of Section 8.3.2 of Air Pollution Control Regulation No. 8 and the conditions of this approval.
7. This approval would allow URI to receive and store high sulfur oil for use at the main heating plant.
8. This approval does not relieve URI from compliance with the 1 April 1986 Consent Agreement or other applicable air pollution control regulations.

9. That the sulfur emission limitation of this approval (1.1 lbs/mmBtu) may be changed as a result of the enactment of Federal or State legislation which effects sulfur emissions.

17 March 1987  
Date

Thomas D. Getz  
Thomas D. Getz, Chief  
Division of Air & Hazardous Materials

URI-EB:MS/2

UNIVERSITY OF RHODE ISLAND - KINGSTON CAMPUS

MAIN HEATING PLANT

EMISSION LIMITATIONS

Stack outlet emissions shall not exceed the following at any time:

SO<sub>2</sub>: 1.1 lbs per 10<sup>6</sup> BTU actual heat input  
Particulates: 0.1 lbs per 10<sup>6</sup> BTU actual heat input

Allowable fuels by boiler:

#1 Oil with sulfur content of 1.21 lbs per 10<sup>6</sup> BTU or less (2.2% S)  
#2 Oil with sulfur content of 1.21 lbs per 10<sup>6</sup> BTU or less (2.2% S)  
#3 Oil with sulfur content of 0.55 lbs per 10<sup>6</sup> BTU or less (1% S) or natural gas  
#4 Oil with sulfur content of 1.21 lbs per 10<sup>6</sup> BTU or less (2.2% S) or natural gas

Emission limitations not to be exceeded by a single boiler:

#1 While burning 1% S oil:  
SO<sub>2</sub>: 1.1 lbs per 10<sup>6</sup> BTU actual heat input  
Particulates: 0.1 lbs per 10<sup>6</sup> BTU actual heat input  
While burning 2.2% S oil:  
SO<sub>2</sub>: 2.42 lbs per 10<sup>6</sup> BTU actual heat input  
Particulates: 0.15 lbs per 10<sup>6</sup> BTU actual heat input  
#2 While burning 1% S oil:  
SO<sub>2</sub>: 1.1 lbs per 10<sup>6</sup> BTU actual heat input  
Particulates: 0.1 lbs per 10<sup>6</sup> BTU actual heat input  
While burning 2.2% S oil:  
SO<sub>2</sub>: 2.42 lbs per 10<sup>6</sup> BTU actual heat input  
Particulates: 0.15 lbs per 10<sup>6</sup> BTU actual heat input  
#3 While burning 1% S oil:  
SO<sub>2</sub>: 1.1 lbs per 10<sup>6</sup> BTU actual heat input  
Particulates: 0.1 lbs per 10<sup>6</sup> BTU actual heat input  
#4 While burning 1% S oil:  
SO<sub>2</sub>: 1.1 lbs per 10<sup>6</sup> BTU actual heat input  
Particulates: 0.1 lbs per 10<sup>6</sup> BTU actual heat input  
While burning 2.2% S oil:  
SO<sub>2</sub>: 2.42 lbs per 10<sup>6</sup> BTU actual heat input  
Particulates: 0.15 lbs per 10<sup>6</sup> BTU actual heat input