

ILLINOIS POLLUTION CONTROL BOARD
September 16, 1971

IOWA-ILLINOIS GAS AND ELECTRIC)
COMPANY)
) #71-165
)
 v.)
)
 ENVIRONMENTAL PROTECTION AGENCY)

ROGER GANOBCEK, ATTORNEY FOR ENVIRONMENTAL PROTECTION AGENCY
CRAMPTON & DALEY, ATTORNEY FOR PETITIONER

OPINION OF THE BOARD (BY MR. LAWTON):

Petitioner filed a variance application with the Board relative to its Moline generating station, seeking permission to exceed the particulate emission regulations governing the control of air pollution as a consequence of coal burning in six stoker-fired boilers pending completion of the Quad-Cities Nuclear Power Station.

The petition and evidence set forth that Boilers #16, #17 and #18 are spreader stokers burning both coal and natural gas. Boilers #19, #20 and #21 are underfeed stokers burning coal only. The variance request seeks permission to burn coal in Boilers #19, #20 and #21 in an emergency capacity until Quad-Cities Unit No. 1 becomes commercially available for service, at which time these three boilers will be permanently retired. The variance further asks that Boilers #16, #17 and #18 be permitted to burn coal to meet load demands until Quad-Cities Unit No. 1 is in commercial service, and thereafter, to permit burning of coal only in emergency situations until July 1, 1974, at which time coal-firing will be eliminated.

The original recommendation of the Agency recommended allowance of the variance for a one-year period which is the maximum we are authorized by statute to allow, retirement of Boilers #19, #20 and #21 upon completion of Quad-Cities Unit No. 1, use of the coal-burning boilers for emergency situations only and upon completion of Quad-Cities Unit No. 1, the remaining boilers subject to the petition be converted to burn No. 2 oil or residual oil of 1.8% sulphur content, or in the alternative, that dry mechanical collectors having 75% efficiency be installed by that date.

At the close of the hearing, discussion took place (R.45) indicating the possibility of agreement between petitioner and the Agency with regard to conditions for the continued coal burning in Boilers #16,

#17 and #18 subsequent to the commercial operation of Quad-Cities Unit No. 1. Following the hearing, a supplemental affidavit was filed by Richard B. Miller, Manager of the Electric Engineering Department of petitioner, proposing the following conditions for the operation of Boilers #16, #17 and #18 after Quad-Cities No. 1 has been placed in operation:

"Boilers #16, #17 and #18, Moline Generating Station, shall be limited on coal burning operation to meet the emergency power requirements only, which shall not exceed the equivalent of 31 days or 744 hours of operation (31 days x 24 hours = 744 hours) per boiler, per annum (a period of 12 consecutive months.)

An hour of operation shall be counted as having been fired on coal when both of the following conditions are met:

- (a) coal is fired singly or in combinations with gas fuel and at a rate such that the equivalent steam generation rate for each boiler on coal is 25,000 pounds per hour or greater, and
- (b) the boiler on line generating steam.

The steam generation rate at a level less than 25,000 pounds per hour is proposed to be exempted from the hours of operation calculations. The maximum continuous steam generation rate of each of these stoker-fired boilers is 100,000 pounds per hour. The 25,000 pounds per hour level, or less, would be approximately equivalent in particulate emission to a pulverized coal facility operating at full capacity and equipped with high grade mechanical dust collectors.

The calculation of the 25,000 pounds per hour level or less excludes periods when the boiler is being started, kept on hot standby or is banked in anticipation of an emergency, or to back for gas fuel firing and during periods when boiler gas contaminant appears imminent.

At these lower levels of firing rate, the coal firing operation is steady and emissions standards are achieved or closely approached.

The equivalent of 31 days of coal operation, as outlined above, would permit one refueling of a nuclear unit at Quad-Cities Station (estimated to require 21 days) and additionally, accommodate two one-week (total of 10 days) operating emergencies in any consecutive 12-month period."

The Agency responded to this proposal stating as follows:

"Petitioner has submitted a proposal for such agreement. The Agency does not accept that proposal, in that it would authorize the generation of steam by coal-burning in all three boilers for more than two hours per day every day of the year, and the constant burning of coal to the limited extent necessary to keep these boilers on 'spinning' standby indefinitely. This would go well beyond 'reserve for emergency purposes'."

The Agency proposes the following limitation:

- a) After Quad-Cities Unit #1 has been placed in commercial operation, coal shall be burned in Boilers #16, #17 and #18 (Moline Generating Station) only to meet emergency requirements, as defined in the Agency's recommendation, such use to be limited to ten days per year, except that;
- b) In the event of the refueling of a nuclear unit at Quad-Cities #1, which refueling renders such unit temporarily useless as a source of power, coal may be burned in said boilers for 21 days, which days shall not be charged against the ten days described in (a) above.
- c) For purposes of these limitations, a day shall be counted if, for at least one hour during that day:
 - i. Coal is fired singly or in combination with gas fuel at a rate such that the equivalent steam generation rate for any boiler on coal is 25,000 pounds per hour or greater; and
 - ii. The boiler is "on line" generating steam.

A second supplemental affidavit was received from petitioner stating its acceptance of the foregoing EPA proposal. However, we do not accept either proposal but do grant a variance for a one-year period subject to the terms and conditions set forth in the decretal portion of this Order. The total capacity of all facilities of Petitioner is 612 megawatts of which the Moline plant presently generates approximately 110 megawatts. The generating capacity of Boilers #19, #20 and #21 is 10 megawatts and of Boilers #16, #17 and #18 24 megawatts. As stated above, Boilers #19, #20 and #21 are coal-fired only and will be phased out completely upon the operation of Quad-Cities Unit No. 1. Boilers #16, #17 and #18 are coal and gas-fired, which units can burn either fuel by itself, or in combination.

Upon completion of Quad-Cities Unit No. 1, Petitioner will be entitled to 50% of its capacity or 404 megawatts which amount will remain the same when Unit No. 2 comes into operation; petitioner then receiving 25% of the total capacity.

On February 7, 1969, the Air Pollution Control Board of the State of Illinois approved an Air Contaminant Emission Reduction Program (Acerp) essentially similar to that now being proposed by the present petition for variance, although at that time it was contemplated that Quad-Cities Unit No. 1 would be commercially available for service by June 1, 1970.

The present petition underlines the importance of placing Quad-Cities in commercial use at the earliest possible date. It is also significant that Petitioner, by this variance request, is seeking only to pursue a program that has been previously approved by our predecessor state agency.

While the capacities of the boilers in question are relatively small, Petitioner asserts that it will be in danger of not meeting its load obligations or the 12% reserve requirements specified in the Iowa Pool Agreement if use of the boilers, subject to the variance request, is denied. A load and capacity data study is in the record (Ex. A, R.42), indicating the system's capacity including the 12% reserve portions from other systems and petitioner's capacity with and without the Quad-Cities Station in operation. The study indicates that even with Boilers #19, #20 and #21 in operation, a 36 megawatt deficiency will occur in January, 1972, based upon its projected generation needs before the operation of the Quad-Cities station. Arrangements have been made for the purchase of 100 megawatts of capacity for an 18-week period beginning December 1, 1971, which according to petitioner will lessen, but not eliminate, the likelihood that coal will have to be burned in some quantities in the boilers in question. The evidence indicates the uncertainty of available gas and fuel oil as alternative fuel for use during the winter months.

Abatement equipment in the form of mechanical collectors will cost in the range of \$350,000 to \$450,000 for Boilers #16, #17 and #18 (R.37).

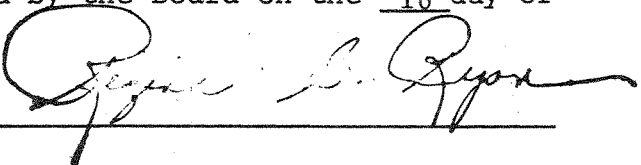
It is the Opinion of the Board that the circumstances demonstrated by petition justify a continuation of the existing Air Contaminant Emission Reduction Program (Acerp) for a period of one year pending the commercial operation of Quad-Cities Unit No. 1. The consequences of continued coal burning, subject to the emergency conditions we impose, are less severe than the hardship which would result to the community in curtailing of petitioner's load capacities, if use of the boilers subject to the variance request is denied. Nor do the circumstances of the instant case warrant the expense of installation of abatement equipment.

IT IS THE ORDER of the Board that Petitioner be granted a variance from the particulate emission regulations of the Rules and Regulations Governing the Control of Air Pollution until September 15, 1972, subject to the following terms and conditions:

1. Prior to the time when Quad-Cities Station No. 1 is in commercial operation, Petitioner shall be permitted to burn coal in Units #16, #17, #18, #19, #20 and #21 in order to meet its load requirements, providing it is unable to meet such load requirements by the use of its other facilities, is not capable of obtaining gas or oil to burn in said boilers and is incapable of purchasing additional electric power from outside sources;
2. Subsequent to the commercial operation of Quad-Cities Unit No. 1, coal burning in Boilers #16, #17 and #18 shall cease and coal burning in Boilers #19, #20 and #21 shall be permitted only in the event of severe emergency caused by major equipment breakdown of petitioner's facilities, and the inability to meet its load requirements from its operating facilities or by the purchase of electrical power from outside sources. "Coal burning" is defined as in the Agency recommendation quoted in this Opinion.
3. Refueling of nuclear units shall take place when gas supply is available unless Petitioner can demonstrate to the Board within 30 days from the date hereof, that such refueling cannot be scheduled at a time when gas is available.
4. Petitioner shall report to the Environmental Protection Agency and to the Board the circumstances under which it has been obliged to burn coal in any of the above-designated boilers including the reasons why such coal burning was necessary, the extent to which such boilers were used and the unavailability of the alternatives hereinabove set forth.
5. This variance shall not be extended beyond the date of its expiration except upon a petition being filed with the Board, hearing held thereon and further order of the Board.

This Opinion constitutes the findings of fact and conclusions of law of the Board.

I, Regina E. Ryan, Clerk of the Pollution Control Board, certify that the above Opinion was adopted by the Board on the 16 day of September, 1971.



A handwritten signature in cursive script, appearing to read "Regina E. Ryan", is written over a horizontal line.