

ILLINOIS POLLUTION CONTROL BOARD

MINUTES OF REGULAR INFORMAL MEETING
November 2, 1970
189 West Madison, Chicago, Illinois

Mr. Kissel, hearing officer in #70-12, 70-13 and 70-14 reported that the North Shore Sanitary District had moved to dismiss the complaints on the ground that they sought the same relief as was sought in a court action. He said the motion was one that must be decided by the Board and advised that the hearing be allowed to proceed and the motion resolved after the hearing.

The principal business of this meeting was a discussion of the proposed automotive air quality standards, #R70-9, with NAPCA officials. In attendance were Messrs. Romanovsky, Kovalik, and Cooper from NAPCA; Mr. Hogland from the City of Chicago; and Messrs. Roberts and Rossin from Argonne.

An instantaneous oxidant value of 0.1 ppm, Mr. Romanovsky said, was enough according to NAPCA criteria to cause eye irritation. Rather than setting a standard never to be attained, Mr. Romanovsky continued, NAPCA preferred for the states to set a standard which was not to be exceeded more than once in a year. Mr. Roberts noted the desirability of specifying a minimum exposure time to facilitate monitoring. An oxidant peak of 0.1 ppm, Mr. Romanovsky said, was statistically associated with an hourly peak of 0.06 ppm. Such a standard, he added, was adequate to protect not only the eyes, but also to protect against impairment of athletic performance which had been discovered at 0.067 ppm of oxidant for a one hour average and to protect against significant harm to plants, which had been found to occur at no lower concentration than a four hour level of 0.05 ppm. The proposal before the Board is 0.05 ppm for the worst hours.

Mr. Romanovsky noted that some might argue against a .05 standard on the ground that even in some remote areas, such as the Great Smokies, concentrations of 0.06 have sometimes been encountered. But he agreed with Mr. Currie's observation that the oxidant in the Great Smokies is likely to be produced as a result of hydrocarbon emissions from heavy forests and that urban background values were likely to be much lower. Mr. Currie inquired whether a standard lower than 0.05 might be desirable in order to minimize oxidant damage to rubber. Mr. Romanovsky replied that the 0.05 standard would be hard enough to meet and that the rubber problem could not be completely eliminated. Mr. Kissel inquired whether a separate standard for ozone was desirable. Mr. Romanovsky said, not in light of present information as to harmful effects, which was based largely on total oxidant measurements. The important time period for oxidants, Mr. Romanovsky said, was the short-term peak. Annual mean values were, as the criteria document points out, useless.

Four or eight hour values would not hurt, but were not very important.

Mr. Kissel inquired whether the proposed standard of 0.05 ppm for oxidants was achievable in light of the fact that at the CAMP station in Chicago the proposed level was exceeded half the time. Mr. Romanovsky replied that in Pasadena better than 90% control of hydrocarbons from pre-1968 vehicle levels would be required to meet a standard of 0.06, but that achieving a similar standard would be easier here. Mr. Currie pointed out that in addition to reliance on stricter Federal Standards for new automobiles, the states might be required to limit traffic to require maintenance and inspection of federally required control devices and to require controls on older cars. Mr. Roberts observed that diffusion modeling of automotive emissions was in a crude state so far. Mr. Romanovsky agreed, and said that in determining the required reduction of emissions NAPCA probably would use a simple roll back technique based on the ratio between present air quality and the proposed standard to determine the proportional reduction of emissions that would be required.

Mr. Currie asked for Mr. Romanovsky's evaluation of the proposed 2 ppm standard for total hydrocarbons. Half or more of airborne hydrocarbons, Mr. Romanovsky said, is always methane, which is inactive in the photochemical smog process, but the proportion is variable and NAPCA urges that a standard be adopted in terms of non-methane hydrocarbons, which can be measured by subtracting methane as measured in the carbon column absorption process from total hydrocarbons as determined by flame ionization. Despite some uncertainties in this method, Mr. Romanovsky said, it is accurate enough to be better than a mere guess based on total hydrocarbon measurements. Moreover, he said, a level in terms of total hydrocarbons would impose an obstacle to the use of natural gas as a vehicle fuel.

The importance of hydrocarbons, Mr. Romanovsky said, is that they are precursors to oxidant formation. Consequently, the only significant period for prescription of the hydrocarbons standard is the average of readings between 6 and 9 A. M. since the values at those hours determine the oxidant levels later in the day. In order to prevent oxidant levels exceeding 0.06 ppm, he said, it would be necessary to limit non-methane hydrocarbons during the 6 to 9 A.M. period to 0.2 ppm as a value not to be exceeded more than once per year. This value, he added, should be required to be met at every station in the region. Hydrocarbon levels in excess of this proposed standard, Mr. Romanovsky said, could be expected to produce photochemical smog on the three or four worst days each year under conditions of severe heat, sunlight, and atmospheric stagnation. Even though it would be cheaper to avoid the oxidant problem by reducing hydrocarbon emissions on an episode basis when such adverse atmospheric conditions are predicted, Mr. Romanovsky said that the NAPCA would prefer to see the problem controlled on a routine basis.

NAPCA, he said, has not encouraged a peak lopping approach. Mr. Roberts pointed out that although it was desirable to measure carbon monoxide concentrations at street level, because human exposure at street level can have significant health effects, it would be misleading to measure hydrocarbons at street level because what is significant in the case of hydrocarbons is due to the impact of sunlight on the entire mixed mass of ambient air. Mr. Romanovsky agreed that rooftop measurements of hydrocarbons would be entirely appropriate.

Mr. Currie inquired as to NAPCA assistance in evaluating the nitrogen oxide standards in advance of the publication of the Federal Criteria document on that subject. Mr. Romanovsky replied that one study, which he would supply the Board, had discovered adverse effects on respiratory health associated with a six month arithmetic average of 0.062 ppm of nitrogen dioxide. Twenty-four hour values, he added, might be important in increasing the incidents of flu cases during epidemics. Although nitrogen oxides, like hydrocarbons are precursors of photochemical smog, Mr. Romanovsky said that it was rational to say at the first level that control of hydrocarbons alone would be likely to produce a satisfactory reduction of oxidant levels, especially since a six to nine A.M. average of 0.03 ppm of nitrogen oxides would be required to meet the oxidant standard by control of nitrogen oxides. Nitrogen dioxide, however, Mr. Romanovsky added, had significant effects on visibility and on vegetation as well. California has set a one hour NO₂ standard of 0.25 ppm on the basis of effects on visibility. This level has been found to produce an undesirable brown color in the air as documented in a 1964 California report published in connection with the California standard. California, he added, was presently considering revisions to its nitrogen oxide standards. Publication of the criteria documents on nitrogen oxides, Mr. Romanovsky added, probably should not be expected before the first of March.

On the subject of lead, Mr. Romanovsky referred to an unofficial California proposal for a 30-day standard of 1.5 ppm based upon California Public Health Department data showing that at levels around 2 ppm there was a progressive increase in lead storage in the body with consequent effect on enzymes producing hemoglobin. The only significant source of lead in the atmosphere is automobiles, and curing the problem depends on removing the lead from gasoline. He cited a number of studies on lead including a March, 1967 California document entitled, "Lead in the Environment and its Effects on Human Health"; several papers in the September 1969 journal of the Air Pollution Control Association; a paper in the magazine "Lancet", January 10, 1970; a paper in volume XXI of the archives of Environmental Health, August 1970; and an article in the British Journal of Industrial Medicine, volume XXVII. A transportation subcommittee of the California

assembly, he said, had recently held a hearing on the subject, pointing out the health dangers and urging that lead additives be banned in the Los Angeles area. NAPCA, he said, is dedicated to reducing the lead content of gasolines, not only because of lead's direct health effects, but also because catalytic converters work better in the absence of lead. Moreover, DuPont, which manufactures lead additives, concedes that lead deposits in engines can increase hydrocarbon emissions by 7 to 10%. On the other hand, a removal of lead, which reduced octane rating to 91, would be likely to impose a 15% cost penalty in terms of fuel usage and the increase in fuel requirements would have an adverse effect on hydrocarbon emissions. The National Academy of Sciences, Mr. Romanovsky said, was presently working on a preliminary draft of the criteria document on lead, but we could not expect to have the final document by the first of January.

The significant period for carbon monoxide standards, Mr. Romanovsky continued, was the eight-hour average, and the Board's proposal of 10 ppm for that period was in the right ballpark. In order to provide a small margin of safety, since some adverse effects were noted at 10 ppm, Mr. Romanovsky suggested that the Board adopt a standard of 9 ppm of 10,000 micrograms per cubic meter. Mr. Kissel inquired whether it would be appropriate to use the carboxyhemoglobin prediction procedure suggested by Argonne for episode control of carbon monoxide with regard to the long-term standards as well. Mr. Roberts responded that although the numerical levels for episode control were different from those of the general air quality standards, it would be reasonable to set one hour and eight hour standards corresponding to predicted levels of carboxyhemoglobin based on differing exposure times in residential areas as opposed to traffic situations. Mr. Romanovsky observed that some people, like policemen and taxi drivers, however, do remain in traffic for eight hours so that a separate standard for traffic conditions might not be justifiable. Mr. Romanovsky added that there was no basis for prescribing an annual standard for carbon monoxide, since none of the studies that have been done on the subject dealt with exposures longer than one week.

Mr. Kovalik reported that NAPCA was concerned about the dates for submission of the implementation plans for the Chicago and St. Louis air quality standards on sulfur dioxide and particulates. Mr. Roberts said that Argonne would submit to the Board, in the next two weeks, its evaluation of the proposed emission standards that had been proposed to the Air Pollution Board last spring. Mr. Currie added that approximately two additional months would be required for Board hearings and decisions on the ultimate plan. A three or four week delay in progress on the plan, Mr. Roberts reported, had been caused by the necessity for compiling a 1970 emission inventory. Mr. Roberts said that EPA had sent a man to Argonne for two weeks to work on this subject and

that information on monitoring needs with regard to the implementation plan would be available from Argonne in December.

Messrs. Roberts and Rossin agreed that it would be possible to flesh out their proposed new strategy for carbon monoxide episode control with more specific requirements relating to concentrations, exposure times, neighborhood characteristics and weather in determining predicted carboxyhemoglobin levels. Mr. Currie said that he found the proposed new strategy very appealing if such objective criteria could be built into it. Mr. Roberts urged the Board not to delay adoption of the revisions to the episode strategy for sulfur and particulate alerts while seeking a more appropriate carbon monoxide strategy.

Mr. Romanek brought up the question of witnesses for the Dresden permit case, #70-21. Mr. Rossin observed that there were qualified people at Argonne with respect to nuclear problems. Mr. Kissel advised Mr. Romanek to contact Minnesota officials who have been involved in a similar case in that state. Mr. Romanek observed that the Radiological Health Bureau at HEW had been concerned with these questions. Mr. Romanek asked whether the Board would like from AEC an informal presentation on nuclear standards. Mr. Currie said yes, if the presentation was general rather than directed to specific problems of the Dresden site. Mr. Romanek agreed to attempt to arrange such a briefing for November 16.

With respect to the Glendale Heights case, #70-8, Mr. Kissel pointed with concern to evidence in the record that the proposed new plant might create serious risk by being built on a flood plain and raised the question whether new sewer connection permits ought to be allowed before completion of the new facility. Mr. Dumelle added that he was worried lest approval of the proposed order in the Glendale Heights case might contribute to a proliferation of small inefficient plants and asked what the Board could do to encourage regionalization of sewage treatment. New federal grant regulations, Mr. Dumelle added, require an exploration of regionalization. Mr. Currie suggested that additional municipalities and sanitary districts with sewage disposal responsibilities in DuPage County be brought into the Glendale Heights proceedings to enable the Board to explore the question of regionalization more fully. He suggested, in addition, that the Northeast Illinois Planning Commission be invited to testify and introduce its regional sewage treatment plan. Mr. Dumelle added that Mr. Poston's deputy, John Morris, who had worked on the county-wide DuPage sewage treatment proposal which had been recently defeated in referendum, should be invited to explain the background. Mr. Lawton suggested that a hearing on a proposed regionalization regulation might be more appropriate since a regulation would bind not only the parties but all interested persons, and since an adversary proceeding was an unwieldy vehicle for such an inquiry. Mr. Kissel inquired whether

the Board had power to order the creation of a Sanitary District. Mr. Currie responded that whether or not the Board had this power, it probably could order individual municipalities to enter into a contract to construct and operate jointly a single sewage treatment plant serving a number of communities. As for distributing the financial burden of such joint construction, Mr. Currie said the Board could take account of the relative progress made by each individual municipality toward sewage treatment and could order the payment of a higher percentage of costs from those causing the most pollution. Mr. Lawton suggested that the Glendale case be reopened to hear further testimony on several points, including possible money penalties, the question of possible flooding and the question of prohibiting new sewer connections until the new plant is completed. In addition, Mr. Currie said the Board should call an inquiry hearing to explore the entire regionalization question respecting DuPage County with possible proposed regulations to follow. The Board agreed to pass on these issues at the Elgin meeting, November 10.

Mr. Dumelle recalled that the State Water Survey had asked for guidance on areas of study that would be of use to the Board. He suggested that we ask the Water Survey to study the entire Illinois River, which drains half the state including areas inhabited by most of the state's population. Moreover, he said, the state is in a better position to determine the destiny of the Illinois than of most other rivers because many interstate rivers reach Illinois in an already polluted state. He agreed to prepare a letter for Mr. Currie's signature directed to the Water Survey asking for such studies.

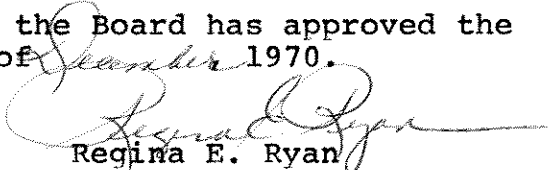
Mr. Currie agreed to prepare a proposed final draft of the episode regulation revisions, #R70-7 for preliminary Board discussion November 9 and for Board publication November 10.

Mr. Dumelle reported that an accident at the Metropolitan Sanitary District had apparently caused a significant overflow of sludge solids into the canals and asked what the Board could do about it. He suggested that under Section 30 the Board might ask the Environmental Protection Agency for an investigation. Mr. Currie suggested that Mr. Dumelle prepare a resolution to this effect for presentation to the Board on November 10.

Mr. Kissel reported that FWQA and the Fish and Wild Life Service had still not indicated their willingness to participate in the Board's further hearings on thermal pollution. Mr. Currie asked that Interior be requested to explain at those hearings the new federal proposal for limiting thermal discharges to each five mile shore zone. Mr. Kissel suggested that Edison witnesses be asked to comment on the new federal proposal and Mr. Dumelle agreed to report to the Board at that hearing on the results of the recent executive session of the four state Lake Michigan Conference in which this

proposal had been advanced. Mr. Currie said that he planned to introduce into the record of the thermal hearings a partial transcript of the federal workshop on the same subject. Mr. Kissel reported that Mr. Landgraf of the Attorney General's office had called a number of scientific witnesses including Drs. Bardach, Mortimer and Stoermer with regard to testifying at the coming hearings but without success.

I, Regina E. Ryan, certify that the Board has approved the above minutes this *9th* day of *September* 1970.


Regina E. Ryan
Clerk of the Board