

## MINUTES

**NORTH DAKOTA ATMOSPHERIC RESOURCE BOARD**

APRIL 14, 1998

The Atmospheric Resource Board meeting was called to order by Chairman William Geiger at 9:00 a.m., April 14, 1998, in the Lower Level Conference Room of the State Office Building, Bismarck, North Dakota. Board members present were William Geiger, James Haaland, Joe Porten, Jay Sandstrom, David Sprynczynatyk, and Steven Weber. Staff members present were Bruce Boe, Director; LeNor Dollinger, Business Manager; Darin Langerud, Chief Meteorologist; and Paul Moen, Field/Research Meteorologist. Others present were Jim Sweeney, Hans Ahlness, Troy Seidel, Mike Dwyer, Paul Germolus, and Dale Frink.

### APPROVAL OF AGENDA

The motion to approve the agenda as presented was made by Jay Sandstrom and seconded by James Haaland. Motion carried.

### APPROVAL OF MINUTES

Minutes for February 19, 1998, meeting, and March 12, 1998, telephone conference call had been mailed out. No additions or corrections were offered.

A motion to accept the minutes as received was made by Joe Porten and seconded by Jay Sandstrom. Motion carried.

### WEATHER MODIFICATION ASSOCIATION

Mr. Mike Dwyer, Executive Secretary of the Weather Modification Association, noted that Williams county is now in the program for three years, and the education of its citizens will be high priority. There will also be work done with Stark, Golden Valley, and Billings counties. Mr. Frink asked about the storm in the northwest at the end of August, and the results that showed in Williams county and the Divide county, suggesting that these storms should be good evidence in itself.

### CONSIDERATION OF PROPOSALS FOR THE 1998, 1999, AND 2000 NORTH DAKOTA CLOUD MODIFICATION PROJECTS

#### Cloud Top Seeding Aircraft, Pilots, and Related Services

Mr. Bruce Boe reviewed the bid scoring form for the bid submitted by Weather Modification, Inc. (WMI) for cloud top seeding aircraft, pilots, and related services. Mr. Boe noted it is the Board's discretion to change any of the recommended points on the bid evaluation. The bidder has proposed putting in data loggers on the both of the high performance aircraft. These would record the position, altitude, temperature, and all seeding events. Two Cessna 340 aircraft were proposed, bid at \$132,800, \$136,825, and \$140,940, for the 1998, 1999, and 2000 projects,

respectively. The proposal was awarded 82.28 points. The cost-per-point was stated by Mr. Boe as \$1,614.00, \$1,662.92, and \$1,712.93 for the three years.

### **Cloud Base Seeding Aircraft, Pilots, and Related Services**

Mr. Boe reviewed the bid scoring form for the bid submitted by WMI for cloud base seeding aircraft, pilots, and related services. Three Turbo Twin Comanche aircraft and four Seneca II aircraft were bid, at \$228,000, \$234,690, and \$241,555, for the 1998, 1999, and 2000 projects, respectively. The proposal was awarded 78.94 points, resulting in costs-per-point of \$2,888.27, \$2,973.02, and \$3,059.98, respectively.

Mr. Geiger asked if the Board would be compelled to use outdated technology if better equipment were to be developed during the contract period. Mr. Sweeney responded that WMI would be amenable to employing such technologies, should they be developed; noting that the service contract allows for renegotiation of any terms at the mutual agreement of both parties (the Board and WMI).

The motion was made by Joe Porten to accept the three year proposal by Weather Modification, Inc. The was seconded by James Haaland. Members James Haaland, Joe Porten, Jay Sandstrom, Dale Frink representing David Sprynczynctyk, and Steven Weber voted aye. There were no nay votes. Motion carried.

### **CONSIDERATION OF WEATHER MODIFICATION PERMITS FOR DISTRICT I & II**

Mr. Boe stated that he had reviewed the permit applications submitted by WMI. The individual named on the permit application as Contractor Field Representative is Mr. Troy Seidel. Before permits can be issued, he said, the Board must legally advertise the Notice of Intention to Modify Natural Precipitation. The advertising must be done in the target counties and the adjacent counties. Permits can not be issued before 21 days elapse after the last publication of legal notice, to ensure interested parties have sufficient time to make their feelings known to the Board.

The motion was made by Joe Porten to approve the permits of Weather Modification, Inc. for District I & II contrigent upon public response. The motion was seconded by David Sprynczynatyk. Members James Haaland, Joe Porten, Jay Sandstrom, David Sprynczynatyk, and Steven Weber voted aye. There were no nay votes. Motion carried.

### **1998 MEMBERSHIP: NORTH AMERICAN INTERSTATE WEATHER MODIFICATION COUNCIL**

Mr. Boe noted that the North American Interstate Weather Modification Council (NAIWMC) is not new, but an organization that had become inactive during the later 1980's. Its purpose, he said, was to provide a forum through which issues and information about projects could be exchanged freely among the various states and provinces. The recent resurgence of weather

modification operations had raised a number of issues which had not been adequately addressed through other means, and in March, the NAIWMC was reorganized, and new leadership elected. The Chair is now Mr. George Bomar of the Texas Natural Resources and Conservation Commission; Vice-Chair is Mr. Boe, and the Secretary-Treasurer is Dr. Joseph Warburton of the Desert Research Institute at the University of Nevada, Reno.

In addition to dealing with interstate operational issues, the Council is engaging help in Washington to promote new federal involvement in weather modification research.

Annual dues have been set at \$1,000, Boe said.

The motion was made by James Haaland that the board become a member in the North American Interstate Weather Modification Council, and pay the annual dues of \$1,000.00. The motion was seconded by David Sprynczynatyk. Members James Haaland, Joe Porten, Jay Sandstrom, David Sprynczynatyk, and Steven Weber voted aye. There were no nay votes. Motion carried.

## **PRELIMINARY RESULTS, WEATHER MODIFICATION SURVEY**

Mr. Darin Langerud spoke to the Board regarding preliminary results of a survey about weather modification sent to the members of the ARB cooperative observer network. The survey was intended to find out what people know about weather modification. Darin noted that within target areas, roughly three out of every four respondents supported hail suppression technology, and believed it is effective, while in non-target counties, a narrow majority doubts that the technology is viable. More educated persons seem to view the technology more favorably. The largest down side to the technology voiced by respondents is cost.

More detailed analyses of the survey results will be worked up and presented to the Board at a later date. The information that was received from the survey will be used to target education on weather modification.

## **UPDATE ON HAIL SUPPRESSION INTERIM STUDY**

Mr. Boe said that ARB staff had met with the Interim Committee on Insurance and Health Care in March, and had at that time presented to the Committee a draft plan for a statewide hail suppression program. The plan had been taken under consideration, but had not been adopted by the committee. Committee member Rep. David Drovdaahl had expressed interest in moving forward with a bill draft or drafts for consideration by the committee, and has met with ARB staff to gain input for such a draft.

If the committee was to adopt draft legislation put forth by Rep. Drovdaahl, it would carry more weight in the upcoming session, Boe thought. If they do not, he said, the bill could still be carried by Rep. Drovdaahl (and perhaps others).

## **STANLEY RADAR PROGRESS REPORT**

Mr. Boe reported that the earthwork at the Stanley Radar site has been completed, and that concrete is to be poured in the next few days. The framing of the wood-frame structure should begin within a week. The radar itself must still be moved from Bowman to Stanley, as it was put into operating condition in Bowman during the winter months.

Licensure from the FCC for the set had been obtained.

## **FLARE PROCUREMENT FOR 1998 AND BEYOND**

Cloud seeding flares are presently difficult to obtain, reported Boe. The company from whom the Board has obtained flares in recent years, the Weather Modification Group (WMG), of Okotoks, Alberta, Canada, is presently requiring an exclusive 14-year contract be signed. This is precluded by state procurement law and common sense, said Boe.

Other options are being investigated. Atmospherics, Inc., of Fresno, California, manufactures flares, but presently not the fast-acting condensation-freezing formulation available through WMG. A San Angelo, Texas, company, Concho Cartridge, Co., is gearing up to manufacture flares, but has not yet had a product tested. Finally, a new company, Weather Modification Nevada, is presently developing state-of-the-art flares. This company will reportedly have some flares tested by the end of the month.

Boe is presently working with Concho Cartridge to have them retrofit some of the NOAA "Stormfury" flares presently in the Board's inventory. The Stormfury flares are not usable in their present form because they are not in standard ejectable casings (20 mm diameter), and the primers required for ignition are past their shelf life and have become unreliable. It is not known how much this will cost, or if it will prove feasible.

## **OTHER BUSINESS**

Mr. Hans Ahlness reported that additional progress on "re-engineering" the Lohse wing-tip nuclei generator has been made. Problems with flow and ignition have been isolated. The capstan will now be removable, affording access to all of the plumbing inside the burner can. A number of pressure problems were found inside generators that have been refitted; this should result in better pressurization and flow.

Hans also reported that the burner tail cones, long equipped with a "stall fence", have been flight-tested without the stall fence, with good results. This allows a more direct path for the ignition rod, less drag, and less splatter and build-up inside the tail cone.

A new ignition circuit card is also being tested. If it works better, all burners will be so equipped.

There be no further business, the meeting was adjourned at 11:35 a.m.

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Hattie Melvin, Secretary

Date: \_\_\_\_\_

Transcribed by Dawn Feist

*William J. Geiger*  
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William Geiger, Chairman

Date: 3-3-99

