

## MINUTES

**NORTH DAKOTA ATMOSPHERIC RESOURCE BOARD**      **March 28, 2007**

A telephone conference call meeting of the Atmospheric Resource Board was called to order by Chairman Henry Bodmer at 9:00 a.m., Wednesday, March 28, 2007.

### ROLL CALL

Roll call was taken and members participating were Henry Bodmer, Bobb Brewer, David Hagert, Judith DeWitz, Jay Sandstrom, and Steven Weber. Also participating were Darin Langerud, Director; LeNor Dollinger, Business Manager; and Mark Schneider, Chief Meteorologist; and Daniel Brothers, Environmental Scientist.

### MINUTES

Jay Sandstrom moved the minutes of the October 26, 2006 meeting be approved as distributed. Second by Judith DeWitz. Motion carried.

### FINANCIAL STATUS REPORT

LeNor Dollinger reviewed the financial status report for the month ended February 28, 2007. There were no questions.

### LEGISLATIVE UPDATE

Darin Langerud gave a brief overview of the Water Commission appropriation bill as it relates to funding of the Board's programs. At this time there have been no changes made that would affect the Board's funding for the 2007-2009 biennium.

### WEATHER MODIFICATION LICENSE RENEWAL APPLICATION

Darin Langerud stated one license renewal application had been received. The application is from Weather Modification, Inc. Mr. Langerud reported he has approved the renewal of the weather modification license of Weather Modification, Inc., Fargo, North Dakota for 2007.

### 2007-2009 NDCMP COST SCHEDULES & CONTRACT APPROVAL

Mr. Langerud reported he had consulted the State Procurement Office on direct negotiation with the Board's only qualified licensee, Weather Modification, Inc., (WMI) regarding providing services for the 2007-2008-2009 ND Cloud Modification Project (NDCMP). This process would remove considerable overhead of preparing an RFB and requiring WMI to respond when it really is not necessary. The necessary forms were filed to move ahead in this manner.

The radar technician will continue to be Clem Aadland who has been under contract with NDARB for the past several years.

## **RESEARCH & EVALUATION EFFORTS**

### **Polarimetric Cloud Analysis and Seeding Test (POLCAST)**

Mr. Langerud reported on the research effort funded by the Board with the University of North Dakota, Weather Modification, Inc., and Ice Crystal Engineering. Adam Theisen, the primary senior student working on the initial analysis of the field work done during POLCAST the summer of 2006, gave his final report to the university. This work used the UND Polarimetric radar looking at cases where clouds were seeded at cloud base with hygroscopic flares which is a different type of seeding than what is being done now in western North Dakota. It has shown to be successful in other areas of the US and World and we need to know if it will be effective in North Dakota. Ice Crystal Engineering is producing the flares that will yield these small salt particles for hygroscopic seeding.

Case study work done in summer of 2006 gave us the opportunity to fly the aircraft on 8 days and got a few seeding cases and were able to compare those with unseeded clouds. There are some interesting results. These results are preliminary because some of the analysis still needs to be done.

Mr. Langerud reported liquid water content of those clouds that were seeded versus those that were not seeded, shows the liquid water content from the radar observations was higher in the amount of water in those clouds relative to the unseeded clouds, and the average duration and average rain rate of the clouds that were seeded were longer than those that were not seeded.

There were not enough cases to say this is a statistically significant result. However, indications are that this hygroscopic seeding can increase the liquid water content in the cloud by helping to produce larger cloud droplets and rain drops, and the duration of those seeded clouds lasts longer than unseeded clouds, thereby producing more net rainfall.

Other methods are being pursued in the polarimetric radar data to try to look at other indications that might show results. This analysis is ongoing at this time. A final report in summer of 2007 will include any further results of this effort.

This work will be presented by Mr. Theisen at the Weather Modification Association annual meeting in San Francisco, April 2007 during the technical session. Hopefully this research will open some doors for doing some additional research in the future.

was deemed appropriate for this agency to help support these stations for the next two years.

Now that the Board has the 30-year climatology for this high-density network (1977-2006) one of the additional ongoing productions each month and each year will be the percentage of difference from normal from the average maps and data that we have from the last 30 years. When we complete the April 2007 map we will also produce statewide where it was above normal, where it was below normal, and where it was near normal.

### **BOWMAN AIRPORT RELOCATION STATUS**

Mr. Langerud reported the status of the relocation is that the Bowman Airport Authority has selected a preferred site south of Bowman west of Highway 85. At this time nothing further has occurred. What remains undetermined is what will happen to the existing airport and the land where the radar is located, and will we need to relocate the radar to the new airport. Staff will continue to seek information regarding the relocation plans.

### **COLLABORATION WITH NATIONAL WEATHER SERVICE**

Mr. Langerud reported on meetings and conversations held in regard to the cooperative effort proposed between NDARB and the National Weather Service for the NDARB radars to provide information on a year-round basis. This is a service that can be of benefit for everyone.

Being no further business the meeting was declared adjourned.

  
HENRY BODMER, CHAIRMAN

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JUDITH DEWITZ, SECRETARY

Transcribed by LeNor Dollinger