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DATE: January 2, 1959

FROM : J. Z. Holland, Meteorologist, Environmental
Sciences Branch, Division of Biology & Medicine

JZH 720150

SUBJECT: TRIP REPORT, BROOKHAVEN, WEDNESDAY 12/17/58

SYMBOL: BMES:JZH . .

I visited the Meteorology Group from about 10:45 a.m. to 2:30 p.m. and attended the biomedical program review 2:30 to 5:00 p.m.

Maynard Smith's 1-hour presentation at the Meteorology Group Leader's meeting in Washington November 25 had given me a general idea of the progress being made in the BNL program since my last visit there a year ago. The present visit enabled me to become familiar with the program in more detail.

Notable recent accomplishments included putting the automatic data handling system in operation and obtaining valuable new data on the relation of acute concentrations downwind of a stack to the sample duration. Future work for which preparations are actively underway includes field studies of particle fallout and long-range atmospheric diffusion measurements (to 60 miles) using oil-fog as the tracer and a light airplane as the sampling platform.

The long-range diffusion program is part of a coordinated effort with Oak Ridge (theory), Hanford (field measurements at 1 to 16 miles using fluorescent tracer, partly supported by Air Force Cambridge Research Center) and Argonne (measurements within 1 mile using stereoscopic photography and freon tracer) to obtain basic information needed in reactor hazards evaluation, waste disposal engineering, and operational planning. Night-time (temperature inversion) conditions, in which the highest concentrations occur, will be studied most intensively. Although known to be higher than in daytime ("lapse") conditions, concentrations beyond 10 miles from a source under these conditions, estimated on the basis of existing meteorological knowledge, are uncertain within a range of about 4 orders of magnitude.

AEC leadership in this field of research in the United States during the past decade is evident in any bibliography. The work at the National Laboratories continues strong, sound, and closely integrated both with the AEC applications and with national and international work in this field generally.

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Historically Brookhaven has been among the earliest and most influential, and their contributions have played an important part in the technical backup for the reactor indemnity bill and for many reactor site, containment, waste disposal and hazard studies. Their present projects appear to be carefully thought out, with an eye to obtaining essential practical results at minimum cost.

Mr. Smith made a good presentation at the program review. My impression of the other presentations from the Instrumentation and Health Physics Department was also favorable.

cc: Dr. Shilling
Mr. Whitnah
Mr. Stanwood

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