

Office Memorandum • UNITED STATES GOVERNMENT

TO : W. Kenneth Davis, Director
Division of Reactor Development, Washington

DATE: July 10, 1958

FROM : H. D. Levine, Chief, Instruments Branch
Health and Safety Laboratory, New York

SUBJECT: REPORT ON ROME CONGRESS - JUNE 16-26, 1958

SYMBOL: HSI:HDL

From my point of view the technical exhibit of the U. S. was well prepared, was in conformity with the needs of the viewing audience and was under excellent managership. The personnel were well trained, they were moreover interested in what they were doing and fluently explained topics to which they were assigned, despite the technical complexity of the subject.

I had the opportunity to visit the USSR exhibit, accompanied by Dr. Leonard Konstantinov of the Institute of Physics of Moscow who was the Director of the USSR pavilion. He is a physicist interested in high energy physics but had a working knowledge of the instrumentation there. The instruments shown were of various vintages and included the models of 1958 manufacture as well as some which were much older, i.e. an aerial survey equipment which takes both magnetic and aerial radiation measurements simultaneously. This unit appeared to be 3 to 4 years old, was badly battered and was one of a limited product according to Prof. Konstantinov. Their most modern survey meters used transistor techniques, the construction is good; if the state of the equipment at the exhibit was any indication, their maintenance is poor.

They do not lean heavily towards scintillation counting and still display equipment with very small sodium iodide phosphors or scintillation counters with cesium iodide phosphors. The multiplier phototubes shown had been reported in my memorandum of March 19, 1958.

The tendency in Russian instrumentation seems to be toward the design of universal types of basic instruments coupled with modified detectors. This is good practice but of course can only exist where a central organization determines what instruments are supplied.

The mechanical design of their instruments are improving, along with improvement in electrical design. Of especial interest was a light weight beta-gamma floor monitor which consists of a survey meter and a hand held probe. The probe contained two or three small steel-bodied thin-wall geiger counters in a light casing with metal runners attached on the bottom. Also provided was a plastic shield that could be inverted to eliminate beta particles.

REPOSITORY Texas A&M Archives & Special
COLLECTION Paul Aebersold Papers Collections
BOX No. 3
FOLDER General Correspondence - July 1958

1104470

W. Kenneth Davis

July 10, 1958

I touched briefly on bubble chamber work here and although Prof. Konstantinov is a high energy physicist he was not familiar with any large bubble chambers under construction in Russia. As I recall he spoke of a 6 liter bubble chamber to be used on a large machine and seemed to be surprised that we were building the large bubble chamber at Berkeley for high energy particle work.

He also mentioned, as a result of a discussion on policy, that he found it difficult to secure the kind of equipment that he needed for his specific kinds of work. His group was now beginning to train a technical group for instrumentation design and fabrication to meet their needs and implied that this was becoming a general situation.

I was asked by Dr. Konstantinov why we did not show some of our instrument techniques. In this exhibit and the Geneva exhibit in 1955 the Russians heavily stressed instruments, especially process control devices, thickness gauges, liquid level devices, etc. This was again a main feature at Rome.

I had the opportunity to speak to Prof. Carlo Matteini of the University of Rome Faculty of Engineering prior to delivery of my paper on June 26th. I am not too certain of the amount of influence that he carries in the Italian Atomic Energy effort but he gave me the following information:

1. The Italians have qualms about the economy of operation of the British air cooled reactors.
2. They understand that enriched fuel elements may be the only way to secure the kind of operation they need.
3. The specific weight loading of the reactor is so much greater in the British than the American proposals that this may be a major deterrent to installation of the British air cooled reactor at the first site.
4. They are not favorably disposed to the Organic Moderated Reactor but only because it is a new type. They understand its qualities and its important differences over other versions of reactors but cannot risk a reactor that has not been proven elsewhere.

He indicated a preference toward our equipment.

With regard to the impact of the U. S. exhibit and our participation in the Congress, some of the people that I knew personally from my previous visit to Naples last year including Prof. F. Giordani were very warm to me and expressed their appreciation of our efforts. He stated that we materially aided the Italian scientific community. It is my considered opinion that further efforts of this kind will prove to be most useful.

1104471

W. Kenneth Davis

July 10, 1958

It was also my impression that the Italians can use much more information on instrumentation techniques especially with reference to the automation of data processing and the application of our new miniaturization technology to reliable instrument fabrication.

cc:

S. Allan Lough, HASL

G.K. Beck, AEC, Wash.

H. D. Brunner, AEC, Wash.

P.C. Aebershold, AEC, Wash. ✓

E. Diamond, AEC, Wash.

J. F. Schumar, ANL

J. M. Harrer, ANL

S. Siegel, NAA

E. C. Anderson, LASL