

§6. A Historical Study on Nuclear Fusion Research Based on the Method of Oral History

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1. The Purpose of Oral History in NIFS FSA

The purpose of oral history is to store the interview records to complement written documents in NIFS FSA (*NIFS Fusion Science Archives*). There are over 23,000 written documents of archives registered and stored. These written documents, however, are not enough for future generation to understand the detailed facts of the historical matters or events. It is useful to collect oral histories by interviews with fusion researchers who played important roles in the past. Their individual memories or information on what they concerned help us to understand some backgrounds of the projects or experiments in the past fusion researches. This fiscal year, the interview with Mr. Mori Shigeru, the ex-vice-director of JAERI, was conducted in cooperation with related JAEA researchers, and the interview record was stored in NIFS FSA.

2. The Interview and its Transcription

The interview with Mr. Mori Shigeru was carried out at JAEA Tokyo office (the 1st conference room of the 12th floor of the old Shinsei Bank Bldg. in Uchisaiwai-cho) on March 10th, 2011. It took almost 4 hours with a brief intermission. The interviewers were Kimura Kazue (chief organizer of the collaborative research), Iguchi Harukazu (head of NIFS FSA), Matsuda Shinzaburo (JAEA guest researcher), Yoshida Hidetoshi (JAEA chief researcher), Amemiya Takahisa (a graduate student of CST, Nihon Univ.)

(1) Questions prepared by each interviewer

A letter of questions was sent to Mr. Mori three weeks prior to the interview. Questions were categorized into the topics according to Mr. Mori's personal career, (a) from his childhood to entrance into The University of Tokyo, (b) University days, (c) A-B dispute, (d) overseas visit (1969), (e) days of JAERI, (f) international exchange, (g) INTOR, (h) present life.

(2) Interview procedure

Kimura mainly chaired the interview and the other interviewers asked some questions in detail following their own concerns. It was amazing and fortunate that 88 year-old Mr. Mori kept talking crisply even during the intermission of several minutes.

(3) Editing

The description of the interview was first checked by each interviewer, and then twice examined by the interviewee in handwriting. He also ensured what he talked to become clearly understood, though the interview record still remained the atmosphere of his narrative.

(4) A letter of consent

A letter of consent was exchanged between the interviewee and Iguchi H., head of NIFS FSA, concerning

the storage of interview record in NIFS FSA and the open to the public.

3. Achievement of the Interview

The detailed facts got clear both on the development of JAERI and the big international trend of fusion research in Japan. One is that the history of significant progress was talked in detail as to the experiments of JFT-1, JFT-2, and JT-60 with a small budget in JAERI. The other is that fusion research in Japan started behind USA, UK, and the former USSR, in time however, strikingly developed to one of the leading countries of the world, beginning from "Panel on Low Beta Toroidal Systems" (held by JAERI in 1971) to international relationship, such as, IAEA conferences, INTOR, and ITER. The interview showed that Mr. Mori continued to meet a lot of challenges as a leader of R&D projects, mission-oriented for fusion reactor, with a feeling of tension and a sense of responsibility all the time.

In the early phase of fusion research in Japan, the budget of fusion research in the field of atomic energy was so limited that Mr. Mori energetically took necessary measures for promoting the research by inviting excellent researchers, requiring expansion of fixed-number of staff, making research plans, and establishing research system. For the first experiment in JAERI, stable plasma was produced with JFT-1. As a next scaled-up device, which would be proper for fusion reactor, Tokamak was chosen, since T-3 in USSR showed a good result like a breakthrough. Mr. Mori persuaded the members of Atomic Energy Commission and Science Council of Japan that fusion research system in Japan should be departed from the basic plasma physics to mission oriented fusion research.

He carried out collaborative researches on an equal basis with leading countries, such as, USA, UK, and USSR, not sitting at their feet one-sidedly. As the chairperson of INTOR workshop, he promoted the international project for a long time. There must be some questions why he took on a tough task facing some difficulties, and how and where his persistent vitality was cultivated. He told that he was liberally raised in a privileged doctor family. Through severe experiences during the war and a long research life under Professor Miyamoto Goro, self-driven spirit was increased; he made the necessary tools for experiments by himself.

His accurate memory was useful to complement the history of activities in JAERI, and international exchanges in fusion researches in Japan.

Note that Japan Atomic Energy Research Institute (JAERI) was re-organized to establish a new organization, Japan Atomic Energy Agency (JAEA) in 2005.

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