

SRA Plenary Session: *Risk Analysis: Creating the Profession* (global growth in the risk analysis profession)

Wednesday, December 7, 08:30 – 10:00 AM

THE PAST, PRESENT, AND FUTURE OF RISK ANALYSIS IN RUSSIA

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First of all a short plan of my report:

I. Institutionalizing of the science: main stages

II. Prehistory

III. Attitude of Administration

IV. Special periodical journals

V. Education and training of personnel

VI. Foundation of scientific communities of researchers and lecturers in risk analysis, united in national associations

VII. Safety and risk legislation

VIII. Perspectives of development of science in the field of safety and risk

I. INSTITUTIONALIZING OF THE SCIENCE: MAIN STAGES

The state of any science as a rule can be clearly traced back through the main stages of its setting up or institutionalizing in a given country:

1) Accumulation of theoretical and empirical material in the framework of closely-related sciences.

2) Carrying out and publication of special scientific researches.

3) Establishment of specialized periodical journals and materials.

4) Training of personnel, setting up scientific and educational institutions.

5) Foundation of scientific communities of researchers and lecturers in the same subject united in national and international societies and associations.

All these stages of setting up or institutionalizing have been passed in Russia by risk analysis as a science and practice.

II. PREHISTORY.

The interest towards risk analysis appeared in the Soviet Union after Chernobyl disaster. Initiator of such research in risk analysis was academician Valery Legasov. Working group on risk assessment and safety problems was organized in 1987 under the President of Academy of Science. Valery Legasov was put the head of it. That group was aimed: to work out methodology of safety analysis, methodology of comparative hazards analysis, definition of acceptable risk level and some other tasks. Valery Legasov stressed the importance of these problems as far back as in 1980, but at that time he didn't get any support for the development of his ideas. But after Chernobyl disaster the necessity of such researches became obvious for many people. Soon after Chernobyl disaster the head of the Soviet government Nikolay Ryzhkov said that accident in the Chernobyl power station seemed to be not only an accident. To his mind Russian nuclear power engineering had come to such hard event with certain inevitability. After Legasov's death in 1988 the activity of his group for risk assessment considerably decreased.

III. ATTITUDE OF ADMINISTRATION

From 1991 Russian Ministry of Science financed the state program "Safety of Russia" with tasks to work out policy, strategy and tasks in the field of risk and safety. One of the main results of this program was publication of several volumes "Safety of Russia: legal, social, economic, scientific aspects"(1996-2000). Russian Ministry of Environment financed in 1994-97 the state program "Ecological Safety of Russia". Ministry of the Russian Federation for Civil Defense, Emergencies, and Elimination of Consequences of Natural Disasters (EMERCOM of Russia) from 1996 financed the state program aimed at working out the state strategy during natural and technological disasters. But these programs and considerable financial expenses resulted in scientific publications only. Neither in federal law, concerning safety and National Security Conception, nor in any other federal

program document. Up to now in Russia there is no strategy on natural and technological risk reduction.

So, risk analysis as a science and practice having more than 15 year period of its existence in Russia and 10 year period of state financing, hasn't passed from qualitative description of safety threats to quantitative risk assessment. In fact only one law in Russia contains a mention of risk as it is understood in SRA. This is law "On technological regulation". But it does not contain quantitative measures of risk assessment or quantitative measures of acceptable and unacceptable risks. As for Russian Academy of Sciences is concerned, up till now it has too small interest to risk analysis, unfortunately. Representatives of medicine are a little ahead – the chief state sanitary inspector of Russian Federation issued Instructions "On using the risk assessment methodology for management of population health and the environment quality in Russian Federation", which enables medical personnel to use risk assessment methodology worked out under the support of US Agency for International Development. However, actual dimension of using this methodology is not very big. While demand for practical application of risk analysis in Russia is very high in such spheres as risk assessment and management for the human health, ecological risks, economic and financial risks etc.

IV. SPECIAL PERIODICAL JOURNALS

Articles on risk analysis in Russia are published mainly in 3-4 journals: "Ecology and Industry in Russia", "Risk Management", "Safety Problems in Emergencies", and recently founded journal "Problems of Risk Analysis". The context and scientific level of articles in these journals often reflect option of editor-in chief. These journals are not reviewed. Besides, these journals are not abstracted or indexed in international abstracts' journals, they are abstracted in only one Russian abstracts' journal "Risk and safety". This abstracts' journal has very short and limited list of abstracted journals. As a rule all of them are Russian.

V. EDUCATION AND TRAINING OF PERSONNEL

First of all it is necessary to decide on a range of problems which a person must possess to be a skilled specialist. For this purpose we need to determine three directions or three levels of training of specialists in risk analysis.

1. Training of people who directly do not take part in risk analysis but whose direct activity is connected with ability to understand results of risk analysis and to use these results in their work. This can be applied in higher educational institutes both technical and humanities. Such training in risk analysis is carried out in some Russian universities and usually it comes to nothing more than small lecture courses.

2. Training of people who directly take part in risk analysis. They must be able to identify and assess risks, to analyze results of risk assessment, to model development of situation and to forecast future risks. That will be a basis to prepare recommendations for decision makers on risk management. In Russia such training is carried out only by Plekhanov Russian Economic Academy in the framework of specialization "Management of economic risks". This training has been carried out since 2000 and already five times students graduated from the Academy.

3. High ranking staff (decision makers) are mostly trained in the Russian Academy of Public Administration at the President of Russian Federation. It is the highest stage in higher education in Russia. Training is given for those who work in Government, Parliament and Administration of the President of Russian Federation. They personally do not make risk analysis but must competently put a task for subordinates who directly carry out risk analysis. Decision makers have to use results of risk assessment in decision making process as well as to understand properly the possibilities and shortcomings of risk analysis and how to use it effectively.

This approach is based on my experience of teaching in risk analysis at the Russian Academy of Public Administration at the President of Russian Federation (decision makers training), the Plekhanov Russian Economic Academy (economic risk analysts training) and Moscow State Institute of International Relations

(training of administration managers) and in accordance to my consulting experience of some state organizations.

VI. FOUNDATION OF SCIENTIFIC COMMUNITIES OF RESEARCHERS AND LECTURERS IN RISK ANALYSIS, UNITED IN NATIONAL ASSOCIATIONS

The problem of uniting specialists in risk analysis in Russia has its specific peculiarities. At present in Russia there are some associations of specialists in risk: “Russian risk management society” (RusRisk); All-Russia public organization “Russian Scientific Society for Risk Analysis” (SRA-RU); and three other organizations considering themselves to be Russian Moscow SRA Chapter (headed by Dr. Vitaly Eremin, Dr. Vladimir Zhivetin, Dr. Sergey Mironyuk).

No one of them wants to unite with the others.

Nevertheless, now in Russia interest to risk analysis among organizations and researchers rises very quickly. The last years conferences on natural and technological safety attracted attention of tens of Russian researchers.

VII. SAFETY AND RISK LEGISLATION

In Russia there are more than 50 laws regulating problems of safety and environment protection, but definition of risk is noticed only in one of them. This law is “On technological regulation”. However, on the whole none of them has quantitative assessment of safety, more over quantitative assessment of danger is made on basis of maximum possible concentration of harmful substances. That doesn’t allow to do integral assessment of danger.

The definition of safety in all spheres of human activity is formulated in the law “About Safety” in 1992: “Safety is securing of vital interests of individuals, society and state from internal and external threats”. All attempts to define both quantity of vital important interests and their securing haven’t given acceptable results so far.

Significant problem for a foreign reader in the field of Safety and Environment Protection is terminological confusion which exists in Russian legislation.

The first misunderstanding is between words security and protection. In the last 10-15 years people of different occupation stopped using word protection and began to replace it by word security, which in their opinion sounds more significant.

The second misunderstanding occurs due to the fact that Russian words «безопасность» can be translated into English by two words which have different meanings: safety and security. Because of this translation of English texts into Russian has several inaccuracies and even perversions of meaning.

The third misunderstanding is incorrect using of words “ecology” and “ecological” in Russian literature. By the way, most people consider words “ecology” and “environment” to be synonyms, this leads to misunderstanding in environmental legislation. Besides the such words as “ecology of spirit”, “ecology of culture” and others add another misunderstanding.

Note that all these misunderstandings are included in laws.

VIII. PERSPECTIVES OF DEVELOPMENT OF RUSSIAN SCIENCE IN THE FIELD OF SAFETY AND RISK

Risk analysis has a large sphere of action in Russia because there is a number of serious problems. Russian scholars and scientists carry out many important researches in the field of biological, chemical and physical mechanisms for maintaining safety, in the field of natural disaster prevention, in the sphere of elaboration of engineering means of protection and life-saving. Researches on low radiation doses carried out by Prof. Helena Burlakova, researches by Prof. Vladimir Shevchenko in cytogenetic risk assessment of radioactive irradiation of people, researches by Vasiliy Kalchenko on genetic effects of plants after radioactive irradiation, researches by Prof. Nikolay Tikhomirov on economic assessment of environmental risks, researches by Prof. Grigoriy Koff in seismic

risks, researches by Prof. Irena Lazareva on safety of megapolises, researches by Prof. Sergey Myagkov in risk of natural disaster, researches by Prof. Boris Revich in risk of hazard substances (such as lead) for human health and many other researches are of significant interest now. However, major part of these research results remains unknown to the foreign readers.

We appreciate significant contribution in the development of risk analysis in Russia made by leading researchers from the Society for Risk Analysis such as professors Warner North, Pieter Stallen and Vlaster Molak who were the first to visit Russia at the beginning of 1990s and gave powerful incentive to the development of risk analysis in Russia. Pieter Stallen brought me to the Society for Risk Analysis in 1991 and Warner North actively tried to unite Russian specialists in risk analysis. His lectures in Moscow had great success. Important part in the development of risk analysis methodology in Russia played Harvard Institute for International Development and Harvard Centre for Risk Analysis which through Moscow branch of HIID since 1990-th actively helped Russian specialists in risk analysis. I personally appreciate meetings with such scholars as Richard Wilson, Anil Markandia, John Graham, John Evans, George Gray, Lorenz Rhomberg, James Hammitt, John Spengler, Ortwin Renn, James Wilson and many others. Contacts with them led to understanding of many vital problems of risk analysis. We appreciate personal kind attention and interest to Russian problems of SRA President Christopher Frey.

Important role for the development of risk analysis in Russia played financial support of several American institutions: Society for Risk Analysis, US Agency for International Development, Harvard Institute for International Development and The John D. and Catherine T. MacArthur Foundation which not once gave opportunity to take part in SRA meetings for Russian specialists, for me in particular.

Problems of personnel training in the field of safety and risk will be discussed at the international round-table as well. But it's possible right now to

take a decision to establish a working group of the Society for Risk Analysis with the aim to work out 1) requirements to specialists in risk analysis and 2) necessary terms for their certification. To my mind this group must include representatives of international organizations actively using risk analysis during last 10 years, representatives of state departments which use risk analysts and have their own claims to risk analysts, representatives of companies and firms which use risk analysts and know well requirements to them, representatives of the professional societies actively using risk analysis in last 10 years and representatives of those institutes which have already had several graduations of such specialists. Such organization from the part of Russia can be for example Russian economic academy, which has been training specialists in economic risk management for already 6 years. I guess all countries and organizations which use risk analysis in their work will be interested in the work of such group.

Professionals in risk analysis, incorporated in Society for Risk Analysis, should determine as a whole series of the issues which make bases of the science, and interpretation of basic concepts and terms. In Middle Ages guilds of craftspeople determined requirements which a master should satisfy. Now the professional corporate culture in risk analysis must be determined by professionals. Such professional approach is interested not only by managers of companies, university professors and heads of governmental organizations, but also by students who desire to get qualification satisfying modern world professional requirements.

Ortwin Renn in his article “Three decades of risk research” wrote: “We must sure that risk managers are able to understand and use wisely the instruments that risk analysts have developed over recent decades. Risk analysis has matured to become a sophisticated and powerful tool in coping with potential harm of human actions or natural events.” To do it we must sure that risk managers have necessary knowledge and skill. To do it we need certification.

These are not all Russian problems in risk analysis, but only a very short review of them.

My e-mail for colleagues who have some questions or would like to discuss these problems: sergey@kharch.msk.ru

Thank you for your attention. I enjoy any opportunity to discuss prospects of our cooperation.

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