

RISK *newsletter*

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Risk Analysis High Priority In White House

Risk analysis has become a high priority both on Capitol Hill and in the White House as the government pursues both environmental protection and economic growth, according to Mark Schaefer, the point person for risk assessment issues in the Clinton administration.

"We are in a time of constrained budgets, and people are asking themselves if we're getting the most from our money for environmental issues," Schaefer said in a recent interview with *RISK newsletter*. "Risk analysis is a logical mechanism to order scientific information and make it useful in the policy-making process."

As the assistant director for environment in the White House Office of Science and Technology Policy, Schaefer handles scientific issues associated with risk assessment. "Our goal is to make sure we bring the best scientific and engineering information available into the equation when a regulatory decision is made."

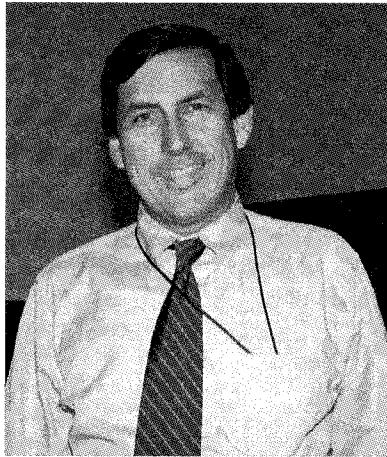
Specific goals of the White House office's environment division include advancing risk assessment methodologies, such as better mechanisms to evaluate ecological risks, to assess the risk to sensitive subpopulations, and to improve risk communication.

"We are very interested in the interface between the scientist conducting the risk assessment and the policy-making official who has to make decisions," Schaefer explained. "Another high priority is ensuring that there is a two-way communication between the public and federal officials. We don't view risk assessment as experts telling the public what they should be concerned about. Communication should flow in both directions."

One of the major accomplishments to date of the White House office's environment division was organizing a Committee on Environment and Natural Resources under the National Science and Technology Council, which is a Cabinet-level body that President Clinton established last year to coordinate science and technology activities across the federal government. In March, the committee convened a conference — in which several Society for Risk Analysis members participated — designed to get input from individuals outside of the federal government on what the nation's research and development priorities should be in regard to the environment and natural resources.

Schaefer chairs the council's subcommittee on risk assessment.

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Mark Schaefer

Beginner's Course In Risk Analysis Features Experts

Newcomers to risk analysis can learn the basics from the experts in August at the Society for Risk Analysis' two-day course titled "New Horizons in Risk Assessment."

"People just entering the field can learn the fundamentals from the movers and shakers of risk assessment, most of whom have been in the field since its inception," said course director Curtis Travis, a past president of SRA who is director of Oak Ridge National Laboratory's Center for Risk Analysis in Tennessee.

"No other risk assessment course offers as large a selection of the biggest names in the risk assessment field, and the reason we are able to get these speakers to come is that they are doing it as a benefit for the Society. None are being compensated — all proceeds go to the Society," Travis said.

Speakers at the course, which is in its eighth year, include the following:

- President Elizabeth Anderson of Sciences International Inc. in Alexandria, Virginia, will present an overview of carcinogen and noncarcinogen risk assessment methods,
- Director Max Costa of the Institute of Environmental Medicine at New York University will explain the principles of toxicology and how basic science can influence risk assessment,
- Chairman and Chief Executive Officer Mildred Christian of Argus International Inc. in Horsham, Pennsylvania, will speak on reproductive risk,

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Risk Analysis

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Another of the White House office's accomplishments has been contributing to the risk provisions in the new Executive Order on Regulatory Planning and Review. The order established a Regulatory Working Group, which now contains a committee on risk analysis (co-chaired by John H. Gibbons, science advisor to the President, and Robert M. Sussman, deputy administrator of the U.S. Environmental Protection Agency).

"The committee is looking at how we use risk analysis in making regulatory decisions and at what broad principles should guide the risk management process," Schaefer said.

Before joining the White House staff, 40-year-old Schaefer was director of the Washington office of the Carnegie Commission on Science, Technology, and Government for four years.

He also previously served as a Congressional Fellow and later project director in the Office of Technology Assessment and worked for five years at EPA. He earned his Ph.D. in neurosciences from Stanford University in California and a bachelor's degree in zoology and botany from the University of Washington in Seattle.

During the past year that he has served under the Clinton Administration, Schaefer said he has noted the impact that SRA members have made in risk analysis debates in Washington's policy making world.

"The Society has played an important role in advancing the debate on this issue. We talk regularly with members of the Society, and members are particularly active on panels of the National Academy of Sciences."

As lawmakers' interest in risk analysis grows, Schaefer hopes to see risk assessment methodologies improve.

"This is a time when risk analysis is getting a lot of attention in Washington, both on Capitol Hill and in the executive branch," he said. "The challenge in this town is to get enough people behind the best ideas and move them ahead."

Deadline Near for SRA Annual Meeting

Abstracts of papers are due June 24 for the Society for Risk Analysis' 1994 Annual Meeting, which will have the theme "Risk Analysis: Learning Across Fields of Application." The annual meeting runs from Sunday, December 4, through Wednesday, December 7, at the Hyatt Regency on the Inner Harbor in Baltimore, Maryland.

A highlight of the annual meeting will be feature sessions on ethical issues, economics, legal aspects, and the treatment of uncertainties in each of the six tracks. The six tracks are ecological risk assessment, risk communication, engineering systems, exposure assessment, dose response, and risk characterization.

For the second year in a row, the Society is granting two \$500 travel awards in each track for the highest quality student papers. The deadline for the 1,000-word extended abstract and other materials that each student must submit is June 24. Award winners will have the opportunity to make platform presentations and will be listed in the newsletter.

SRA also will present an award for the most scientifically meritorious poster presented at the annual meeting. A committee will judge the posters according to their scientific rigor, creativity, and advancement of the science of risk assessment. The author of the winning poster will receive an inscribed plaque and acknowledgment in the newsletter.

For participants outside of the United States, limited financial aid is available to help defray travel costs. Interested individuals should contact the Secretariat's office in McLean, Virginia (see telephone numbers and address on page 12).

Those wishing to register for the meeting, receive abstract submission guidelines, or request information on exhibiting risk-related books and software should also contact the Secretariat's office.

To make hotel reservations, call the Hyatt Regency at (410) 528-1234. Special conference rates will be available beginning September 1.

Beginner's Course

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- Thomas E. McKone, the group leader of exposure assessment at the Lawrence Livermore National Laboratory, will review exposure assessment issues,
- Professor Lester Lave of Carnegie-Mellon University in Pittsburgh, Pennsylvania, will outline risk management,
- Course director Travis will present a variety of risk assessment issues,
- Director Bernard Goldstein of the Environmental & Occupational Health Sciences Institute in Piscataway, New Jersey, will review risk policy,
- Vice President Chris Whipple of ICF/Kaiser Engineers in Oakland, California, will speak on risk management, and

- Director Susan Santos of the Center for Risk Communication at Columbia University in New York City will lecture on risk communication.

At scheduled times during the course, attendees will have the opportunity to talk directly with the speakers, four of whom are past SRA presidents (Anderson, Lave, Travis, and Whipple). "We have specifically designed the course so that participants can have interactions with the speakers. It won't be just lectures," Travis noted.

SRA is holding the course at the Hyatt Regency hotel in Arlington, Virginia, on August 29-30. The fee is \$550 if paid by July 15 and \$650 thereafter. Special rates are available for graduate students and for groups. To register, contact course coordinator Mary Oran at (615) 376-6844 or course director Curtis Travis at (615) 576-2109.

Reform Proposed for Pesticide and Food Safety Laws

In April the Clinton Administration, together with U.S. senators and representatives, proposed sweeping legislative changes to reform the nation's laws concerning pesticides, including residues in food.

The Pesticide Reform Act of 1994 would amend both the Federal Food, Drug, and Cosmetic Act and the Federal Insecticide, Fungicide, and Rodenticide Act if passed by the U.S. Congress. It is backed by the U.S. Environmental Protection Agency, the U.S. Food and Drug Administration, and the U.S. Department of Agriculture.

The proposal "is the first significant breakthrough on food safety in 20 years," EPA Administrator Carol Browner said on April 26 to Congress.

In two areas of specific interest to the Society for Risk Analysis, the legislation would incorporate recommendations made by a 1993 National Academy of Sciences report concerning pesticide risks for infants and children, and it would eliminate the Delaney Clause (Section 409) of the Federal Food, Drug, and Cosmetic Act.

"The new act would eliminate the Delaney Clause by having identical criteria for raw and processed food," said EPA spokesperson Al Heier. Under the legislation, all foods, whether raw or processed, would be governed under a new uniform safety standard in Section 408 of the Federal Food, Drug, and Cosmetic Act, which would replace the existing Section 408 and Section 409.

The proposal targets four main areas, according to the EPA:

- Sets one strict, health-based, scientific standard for all pesticides used on all food.
- Sets strict deadlines for getting dangerous pesticides off the market. Those who sell and use pesticides bear the burden of proving they are safe.
- Ensures extra protection for children, who receive greater exposure to pesticide residues because they consume more food for their size than adults.
- Reduces pesticide use by helping farmers adopt less risky methods of pest control.

Some SRA Members Support Eliminating Delaney Clause

Several Society for Risk Analysis members joined together earlier this year to write to President Clinton in favor of eliminating Section 409 of the Federal Food, Drug, and Cosmetic Act, which is known as the Delaney Clause. Following is an excerpt of the January 4 letter, which noted in its closing that the views expressed are not those of the Society but of the individuals named in the letter. To request the full version, contact the Secretariat's office (address on page 12).

Dear Mr. President:

We are writing to urge you to move expeditiously to remove that part of the Food, Drug, and Cosmetic Act commonly called the Delaney Clause.

The standard to which food additives are generally held — "reasonable certainty of no harm" — provides a solid basis for using science and modern risk assessment to reach regulatory conclusions, and should stand as the basis for judging food safety.

Presence of the Delaney Clause in the law distorts and delays decision making by the regulatory agencies responsible for enforcement — the U.S. Food and Drug Administration and the U.S. Environmental Protection Agency.

Conceived in an era when substances capable of increasing cancer risk were believed to be rare, the Delaney Clause expresses in policy the notion that prohibiting food-borne exposure to all such substances is the best way to reduce that risk. We know now that such substances are both common and ubiquitous in food. They literally cannot be removed.

The Clause expresses the mistaken notion that any substance capable of increasing cancer risk at some level of exposure will do so at any level, and it assumes that anything increasing cancer risk when fed to animals will always present such a risk in humans. Since the time of the Clause's passage 35 years ago, certain vitamins, minerals, hormones, and other substances necessary to life have been shown to induce tumors under some conditions; at normal levels they do not do so. The essential mineral selenium inhibits cancer at normal dietary levels but will induce tumors in animals at high dose levels.

An example of the Clause's shortcomings is the common food anti-oxidant BHA, which has been observed to cause tumors in the forestomach of rodents. Humans do not have this organ, and feeding the anti-oxidant to animals that lack one causes no increased cancer risk. Furthermore, the use of anti-oxidants in food preceded a significant decline in stomach cancer in humans. Nevertheless, FDA has been petitioned to ban BHA.

The Clause has caused the FDA to consume many person-years of effort to circumvent the statute in cases where its application would be a mistake. These years of regulatory effort give no yield of public health protection.

Finally, and perhaps most important, its application can cause harm to our economy and to public health. If BHA and related anti-oxidants were removed from food use, intestinal cancer likely would increase. We request that you ask Congress to repeal the Delaney Clause with all deliberate speed.

Signatories: SRA members Elizabeth Anderson, Raymond Boykin, Paul Deisler Jr., Ann Fisher, Baruch Fischhoff, B. John Garrick, John Graham, Yacov Haimes, Fred Hoerger, Chris Hohenemser, Howard Kunreuther, Lester Lave, Roger McClellan, David McCallum, M. Granger Morgan, D. Warner North, Robert Tardiff, Curtis Travis, Richard Schwing, Chauncey Starr, Ola Svenson, Arthur Upton, James D. Wilson, and Chris Whipple.

Risk Programs Varied at Universities

Editor's Note: This is the first in a series of RISK newsletter articles to be published periodically on graduate-level risk courses at universities around the world. Readers are invited to send information on their university programs to the newsletter (see address on page 12).

In the past decade, the number of risk analysis courses offered at major universities has mushroomed as interest in the field continues to increase. While most universities do not offer a degree in risk analysis, they have begun developing strong risk programs that attract graduate students in disciplines ranging from engineering to business to environmental sciences.

"There has been an increase in the number of risk analysis courses as more universities have begun developing these kinds of programs," said SRA member David McCallum, who is a principal with Focus Group and is associated with Columbia University in Washington, D.C. "It is hard to chart the real level of activity because the area is so broad and variable. Most of the courses being offered on risk assessment or risk analysis have developed informally, and each course turns out to be a little different. One reason for this is that there is not a good, standard textbook."

Following are examples of the risk-related programs that several universities in the United States offer:

Carnegie-Mellon

At Carnegie-Mellon University in Pittsburgh, Pennsylvania, the faculty emphasizes an interdisciplinary approach. Graduate students can receive degrees with an emphasis on risk analysis in four areas: the Department of Engineering and Public Policy, the H. John Heinz III School of Public Policy and Management, the Department of Social and Decision Sciences, and the Graduate School of Industrial Administration, which is the university's business school.

"In contrast to most universities, the departmental boundaries at

(Continued on page 5.)

Vice President Gore Helps Establish Environment Chair

Search Under Way At Tennessee Campus

The search is on for a world-class expert in environmental studies to fill the Nancy Gore Hunger Chair of Excellence in Environmental Studies at the University of Tennessee in Knoxville.

U.S. Vice President Al Gore originated the idea for the chair in memory of his late sister Nancy Gore Hunger, who died of cancer in 1984.

"The global environmental crisis is an enormously complex issue deserving of the in-depth, sophisticated, multi-disciplinary study that will be possible as a result of this chair of excellence and this program," Gore said at a press conference attended by RISK newsletter on May 2.

Gore earlier donated \$50,000 in royalties from his book *Earth in the Balance* (1992; Houghton Mifflin Company) as seed money for the \$1 million chair. The university then raised \$450,000 from other private sources, and the state matched the donations with \$500,000. Interest earned by the fund will contribute to the salary of a top environmental studies expert who will teach and conduct research on environmental issues.

Dean Larry Ratner of the College of Liberal Arts is organizing the search committee, which will include members from a broad range of disciplines.

In addition to donating the initial funds that launched the chair, Gore is working closely with the university to develop the program.

"The vice president has been extraordinarily involved," said Society for Risk Analysis member and UT economics professor Milton Russell, who teaches environmental policy and risk analysis and is director of the Joint Institute for Energy and the Environment. "He has had some of us up to Washington to talk about his vision of the chair and to reassert his interest in making this a major contribution to the university's program. At the same time, he has made it clear that the university will make its own decisions, and he has been scrupulous in not trying to exert unjustified influence."

One of Gore's contributions was to set up a meeting with other universities that have initiated similar programs to discuss their pitfalls and successes. "I had the opportunity to bring together a group of the leading earth scientists from all over the country with officials from UT-Knoxville to talk about what mistakes other universities have made in setting up programs with the earth sciences and what success stories exist around the country," the vice president said. "I pledge to continue my personal involvement with the university in helping to ensure the success of this whole program."

Gore said he hopes the chair will help bring "new solutions, new ideas, new approaches" to environmental problems around the world.

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Vice President Gore announced the chair's creation in Knoxville in May.

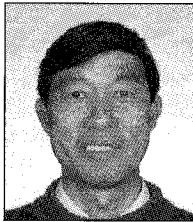
Risk Commission Takes First Step

Two new members have joined the federal Risk Assessment and Management Commission as it prepares for its first meeting after more than two years of delays.

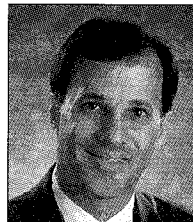
The commission, which was established by the 1990 Clean Air Act Amendments to examine the role of risk analysis in federal regulation concerning public health and the environment, was scheduled to meet on May 16 as this issue of the RISK newsletter went to press.

Joining the 10-member commission are two members whom President Clinton recently appointed, family physician Peter Y. Chiu and lawyer Alan Craig Kessler. They replace Bush-appointees Thorne Auchter, a policy consultant, and attorney Anthony Thompson.

Chiu, who is currently with the Kaiser Permanente Medical Group in Milpitas, California, and is an assistant



Chiu



Kessler

said Chiu, who switched careers from environmental engineering and management to the medical field in the mid-1980s.

Previously as the principal environmental engineer with the Association of Bay Area Governments in Berkeley, California, he helped create one of the first comprehensive environmental management plans in the country in the late 1970s. "It was an integrated plan that covered air and water pollution, solid waste, and hazardous waste for the entire Bay area," he said.

clinical professor at Stanford University's School of Medicine, said that he will favor a comprehensive approach to environmental issues as a commission member.

"An integrated plan is important because often one problem such as solid waste is solved only to create a new problem such as air pollution,"

(Continued on page 6.)

Risk Programs

(Continued from page 4.)

Carnegie-Mellon are incredibly permeable," said M. Granger Morgan, an SRA Fellow who is department head of the university's Department of Engineering and Public Policy. "At other universities, whichever unit the student is with can make all the difference in the world in his or her degree. Here, you can do virtually the same degree in all four units because a student can work with faculty from any area."

Many graduate students at Carnegie-Mellon who are interested in risk analysis earn a Ph.D. in engineering and public policy through the Department of Engineering and Public Policy.

"The program focuses on problems in which technical details matter, and it includes risk assessment, risk communication, and risk perception," Morgan said.

To enter the university's program, a student must have a bachelor's or master's degree in science or engineering.

University of North Carolina

The University of North Carolina in Chapel Hill offers five programs for graduate students interested in risk

analysis through its Department of Environmental Sciences & Engineering, which is part of the School of Public Health.

"Students can receive a doctorate or a master's degree in environmental sciences and engineering or in public health," said Deborah Amaral, an SRA member who is an assistant professor in the university's Department of Environmental Sciences and Engineering.

The department's five risk-related programs are air, radiation, and industrial hygiene; aquatic and atmospheric sciences; environmental health sciences; water resources engineering; and environmental management and policy.

"Most risk assessment and risk management courses take place in environmental management and policy," Amaral said. "In this program we have a lot of risk assessment, policy analysis, decision analysis, and risk management courses."

Johns Hopkins

At Johns Hopkins University in Baltimore, Maryland, graduate students interested in risk analysis can take courses in the Department of Health Policy and Management.

"We have course work in risk assessment and environmental policy that

is offered as part of the overall master's of public health degree program," said SRA Councilor Tom Burke, who has a joint appointment as an assistant professor in the university's Department of Health Policy and Management and in the Department of Environmental Health Sciences.

The university also offers a joint degree in public health and in environmental health sciences and policy for people with a master's degree who have decided to return to school after working in their profession for several years.

"We offer the joint degree as a mid-career level program for risk and environmental professionals interested in interdisciplinary training," Burke said.

Gore

(Continued from page 4.)

"The global environmental crisis is an issue that has caused me to devote a tremendous amount of time and work in an effort to find solutions for the collision between worldwide civilization and the ecological system of the earth," he said. "The kind of sophisticated research and study that will take place here at the University of Tennessee in Knoxville is absolutely essential (to finding those solutions)."

Risk Commission

(Continued from page 5.)

Chiu also previously held positions with the Bay Area Sewage Services Agency, the Berkeley Solid Waste Management Commission, and the City of Oakland. He received his bachelor's degree in civil engineering, master's in occupational health, and doctorate in environmental health and health administration from the University of California in Berkeley and his doctor of medicine degree from Stanford University.

Kessler, the final member joining the federal risk commission, is a partner in the law firm of Buchanan Ingersoll in Philadelphia, Pennsylvania, where he specializes in class action, antitrust, and commercial litigation. His experience includes defending a Fortune 500 manufacturer against asbestos-related claims in the single largest nationwide class action suit filed to date in the United States.

"I share the vice president's environmental views," said Kessler, who served on President Clinton's transition team in 1992-93 and is an active fundraiser for the Democratic Party. "The environment is a high priority, but we also have to consider the impacts on the economy and business and other goals."

Kessler, who is active in his local government, is a township commissioner for Lower Merion, Pennsylvania, and has served on Philadelphia's City Planning Commission, Board of License and Inspection Review, and Task Force on the Homeless. He received his law degree from the University of Maryland in Baltimore and his bachelor's degree in political science from the University of Delaware in Newark.

Member News

John G. Keller, a specialist in toxicology, regulatory affairs, and litigation support, has joined the environmental, safety and health consulting firm of Apex Environmental, Inc. as senior scientist. He may be contacted at 15850 Crabbs Branch Way, Suite 300, Rockville, Maryland 20855, telephone (301) 417-0200, fax (301) 975-0169.

Readers Respond to Newsletter Survey

To date, 83 readers have responded to RISK newsletter's survey, which the newsletter distributed at the Society for Risk Analysis' 1993 Annual Meeting and reprinted in the last issue.

While the survey results are by no means a statistical representation of the Society's membership, the information will be extremely helpful to the newsletter as it charts a course for the future. Following are some highlights from readers' response to the questionnaire.

Top 10 Topics

Readers' top 10 article topics and features in the newsletter are listed below along with the percentage of respondents who selected each item:

- 90% articles on special issues, which ranked in the following order: (1) exposure assessment, (2) risk communication, (3) ecological risk, (4) global risk and residential exposure, and (5) engineering
- 82% risk-related happenings
- 77% articles on special SRA projects such as workshops or the residential exposure assessment reference book
- 73% articles on legislation affecting risk analysis
- 72% articles on U.S. EPA risk-related regulations
- 69% conference advertisements
- 66% annual meeting news
- 59% calendar of events
- 55% book advertisements
- 48% employment advertisements

Computer Data

Of those who responded to the survey, 89% use a computer daily, 66% have access to electronic mail, 46% have access to the Internet computer network, and 37% would like to receive RISK newsletter electronically via a computer network.

Reader Demographics

In respect to age, the majority of respondents were in their 30s and 40s. Specifically, 12% were ages 21 to 30, 40% were ages 31 to 40, 35% were 41 to 50, 10% were ages 51 to 60, and 3% were ages 61 to 70.

A breakdown by gender shows that young respondents were more likely to be female and older respondents more likely to be male:

Age	Percent Female	Percent Male
21 - 30	80%	20%
31 - 40	55%	45%
41 - 50	21%	79%
51 - 60	13%	87%
61 and up	-0-	100%
Total for all ages	40%	60%

Recycling the Newsletter

While the newsletter has long been printed on recycled paper, several respondents retouched on the debate of whether or not the newsletter should be printed on *recyclable* paper.

Since several readers have indicated periodically that they keep their issues of RISK newsletter as a reference for several years and that a single copy of a RISK newsletter is often shared among three or four people, especially in countries outside the United States, the newsletter staff remains committed to printing on recycled paper coated with a gloss, which is more durable than a non-glossy paper but is not universally recyclable.

Here are two viewpoints from respondents who touched on this debate:

"Please keep (the newsletter paper) glossy. They stay in shape better. I use (the newsletters) and refer to them sometimes years back. This is not for recycle."—Jon Klauenberg, Armstrong Laboratory.

"Print on non-glossy paper that we can recycle easily."—Kelly G. Sund, Health & Environmental Sciences Group, Ltd.

"The newsletter should not be printed on glossy, non-recyclable paper." William Max, Law Environmental.

Editor's note: The newsletter staff is still interested in receiving readers' comments on the questionnaire, which was published in the first quarter 1994 issue.

SRA International Reports

SRA-Europe Sets 1994 Agenda

Expanding membership, adopting a mission statement, and choosing a means of communication are among the topics that the Society for Risk Analysis' European section will focus on in 1994, according to President Detlef Müller.

Müller noted that expanding the section's membership across Europe will increase not only the opportunities for exchange among interested experts but also the ability of the section to influence developments in Europe when it is appropriate. "As part of this, the section should establish contacts with the opinion leaders and decision makers of national and European authorities to make itself known as a competent group of experts in the broad field of risk analysis," he said. "This should include communication with the press about the activities and possible recommendations of SRA-Europe."

At its May meeting, the SRA-Europe Executive Committee will discuss a mission statement and its 1995 conference. The committee will present the mission statement to members for adoption during the 1995 conference in Stuttgart, Germany, which has been scheduled for May 21-24.

The Executive Committee also will discuss preparations for the elections of new members to the committee. The ballots will be mailed in the summer. Address any questions regarding the election process to President Müller's office.

The possibility of a separate journal or newsletter for SRA-Europe is another agenda item. "The section needs some means of communication among its members to create a medium for exchange," Müller said.

Finally, the section will consider with its colleagues in the Commonwealth of Independent States how to organize interaction with or within SRA-Europe. "There are major issues we have to resolve, mainly the financial aspects of the activities

Müller Is SRA-Europe's President

Detlef Müller became the fourth president of the Society for Risk Analysis' European section in January. He joined SRA and SRA-Europe in 1991 and also was elected to a three-year term on the section's Executive Committee.



Müller

Müller studied biology and hydrobiology at the University of Hamburg where he focused his Ph.D. research on environmental toxicology. He joined the Procter & Gamble Company in 1975 and was located in Belgium and the United States before returning to Germany in 1989. He now is based at the company's Schwalbach Technical Center.

Müller currently is responsible for Procter & Gamble's food and beverage activities in Europe, Asia, and Africa. The key focus of his work is to define health risks due to less-than-ideal nutrition and to find ways to reduce or eliminate such risks, including preventive effects of nutrition for chronic or degenerative diseases.

in those countries where funds are extremely limited," he said. "We need to develop structures which meet the specific needs of those geographies as well as the desire to have SRA-Europe as a platform for exchange across the continent."

Contact **SRA-Europe** through Detlef Müller, SRA-Europe President, Procter & Gamble Company, Postfach 2503, D-65818 Schwalbach am Taunus, Germany, telephone 49 6196 89 4398, fax 49 6196 89 4476.

Other SRA International Contacts

Croatia: Branimir Molak, Daniciceva 33/IV, 41000 Zagreb, Croatia, telephone (385) 41 329 816, e-mail molak@rujan.srce.hr

Czech Republic: Karel Blaha of the National Institute of Public Health in Prague, Czech Republic, telephone (422) 67311 467, fax (422) 67311 236, e-mail blaha@csearn

Philippines: Corazon PB. Claudio of Technology, Environmental Risk and Management Foundation Inc. in Manila, Philippines, telephone (632) 673-2619, fax (693) 693 4079

Russia: Vitaly A. Eremenko of the International Centre of Educational Systems in Moscow, Russia, telephone 7 (095) 275 3489, fax 7 (095) 924 6852, e-mail lmi@lmis.kiae.su

Ukraine: Naum I. Borodianskii of the V. Glushkov Institute of Cybernetics in Kiev, Ukraine, fax 266 74 18

SRA-Japan to Hold Spring Meeting

The spring meeting of the Society for Risk Analysis' Japanese section will include a symposium on risk issues associated with the interface of machines and humans, focusing on nuclear reactors, jet liners, and high-speed bullet trains. The section has invited specialists from the atomic energy, airline, and railroad industries to speak at the June 10 event at the University of Tokyo.

The chair of the section's special committee to prepare for the joint 1995 Annual Meeting of SRA and SRA-Japan is Eiji Yokoyama, director of Japan's National Institute of Public Health in Tokyo and the 1990-92 president of SRA-Japan.

Contact **SRA-Japan** through Saburo Ikeda, Society for Risk Analysis-Japan Section Secretariat, University of Tsukuba, Institute of Socio-Economic Planning, Tsukuba, Ibaraki 305, Japan, telephone (81) 298-53-5380, fax (81) 298-55-3849, e-mail ikeda@shako.sk.tsukuba.ac.jp.

Risk-Related Happenings

Residential Exposure Workshop Aimed At Mid-Level Professionals

Members of the Society for Risk Analysis are helping to organize a residential exposure assessment workshop in September for practitioners with mid-level experience.

"Reference House Workshop: Residential Exposure Assessment for the '90s" will focus on exposure modeling tools and lessons from indoor air monitoring studies. Speakers will cover key issues such as chemical-specific and product-specific considerations, current software for modeling residential exposures, and case studies.

Coordinators of the workshop are SRA's Exposure Assessment Specialty Group, the International Society of Exposure Analysis, and the International Society for Environmental Epidemiology. Organizers are SRA members Jeffrey Driver, Bert Hakkinen, David McCallum, and Gary Whitmyre. The event is part of SRA's and ISEA's Residential Exposure Assessment Project (see below).

The workshop will be held 9 a.m. to 4 p.m. on September 18 at the Sheraton Imperial Hotel in Research Triangle Park, North Carolina. The fee is \$150 for those who register before May 31 and \$175 thereafter. To register, contact the SRA Secretariat (see address on page 12).

Surveys Due for Residential Exposure Project

The deadline is June 15 for the return of an eight-page questionnaire concerning the Society for Risk Analysis' and the International Society of Exposure Analysis' effort to develop a reference book on residential exposure assessment.

The survey will help organizers to identify key issues, needs, and interests that professionals in the exposure assessment community believe the project should address. The effort, titled Residential Exposure Assessment Project, involves a cooperative agreement between the U.S. Environmental Protection Agency's Office of Health Research and SRA. Organizers expect the document to serve as both a textbook for graduate-level students and a resource for practitioners.

To request a copy of the questionnaire, contact the SRA Secretariat (see address on page 12). The chair of the project's Management Committee is David McCallum, telephone (202) 338-2156 or fax (202) 338-2159.

ESREL '95: Call for Papers

"Safety and Reliability Analysis and Assessment: the Pragmatic Approach to Reducing Risk" is the theme of an international conference in 1995 dealing with reliability, safety, maintainability, and dependability of operation. ESREL '95 will be held May 8-10 at the Bournemouth International Centre in England. Sponsors and organizers are the Institute of Quality Assurance and the Safety and Reliability Society, which are based in the United Kingdom.

Abstract submissions were due by the end of May 1994; however, the conference office told RISK newsletter that

abstracts received by the end of June 1994 also will receive consideration. One author per paper will receive a 30% discount on the basic delegate fee.

For information, contact Mrs. Tracy Macfarlane, Conference Department, Institute of Quality Assurance, Training and Conference Centre, 10 Grosvenor Gardens, London SW1W 0DQ, United Kingdom, telephone +44 71 823 5609, fax +44 71 824 8030.

U.S. EPA to Host Open House In North Carolina

Society for Risk Analysis members are invited to attend an open house that the U.S. Environmental Protection Agency's Health Effects Research Laboratory (HERL) is holding on June 8 at the U.S. EPA Environmental Research Center on Alexander Drive in Research Triangle Park, North Carolina.

Posters explaining research conducted by the laboratory's investigators will be available for viewing beginning at 9 a.m. The laboratory's director Lawrence W. Reiter will speak on "HERL Research and Accomplishments" at 9:30 a.m., followed by other presentations.

For more information, contact the HERL open house coordinator at (919) 541-5193.

National Lab to Hold High-Consequence Operations Safety Symposium

The Sandia National Laboratories Surety Assessment Center will sponsor a symposium on high consequence operations safety on July 12-14, 1994, in Albuquerque, New Mexico. The symposium's objective is to share strategies, methodologies, assessment processes, and experiences in avoiding high consequence accidents or incidents.

The symposium will include tours of selected Sandia laboratory facilities and sessions on weapons, explosives manufacturing, refining and mining operations, power reactors, airline operations, shipping and submarine operations, large-scale food consumable processing, and natural disaster contingency and recovery planning.

For more information contact Angela Compos of the Sandia National Laboratories' System Studies Department at telephone (505) 844-4721 or fax (505) 844-9225.

Chemical Society to Offer Environmental Risk Symposium

The American Chemical Society's Environmental Division is offering the symposium "Environmental Risk Decision Making: Values, Perceptions and Ethics" on Wednesday, August 24, at the Washington Convention Center in Washington, D.C. The organizer is SRA member C. Richard Cothorn of the U.S. Environmental Protection Agency's Center for Environmental Statistics and Information Development Staff.

The symposium's goal is to examine the place that values and value judgments have in the process of environmental risk

decision making. A 50-page discussion paper about the symposium is available. To request the paper or more information, contact Cothorn at telephone (202) 260-2734 or fax (202) 260-4968.

PSAM-II Attracts More Than 400

The second international conference on probabilistic safety assessment and management, PSAM-II, convened on March 20-25 in San Diego, California, with 411 participants. Researchers and practitioners from Brazil, Canada, England, France, Germany, Hungary, Israel, Italy, Japan, Korea, Mexico, the Netherlands, Poland, Russia, Slovenia, Spain, Taiwan, the United States, and other countries attended.

"PSAM-II brought together analysts from a wide variety of industries, including the nuclear, the chemical process, the aerospace, as well as the toxic and nuclear waste management industries," reported George Apostolakis of the University of California in Los Angeles, who was technical chair of the 1994 conference. "Technical subjects discussed included the traditional ones, such as methods for uncertainty analysis, human reliability, expert systems, risk management, and expert opinions, as well as new topics of great interest, such as software dependability, risk-based regulation, and the impact of organizational factors on safety."

SRA Southern California Chapter members provided support for the meeting, and former SRA president B. John Garrick of PLG Inc. gave the keynote address.

The three-volume proceedings of PSAM-II are available at a cost of \$100 (\$150 for international delivery), payable to SCSRA-PSAM. To order, contact Professor George Apostolakis, 38-137 Engineering IV, University of California, Los Angeles, CA 90024-1597, fax (310) 206-2302.

PSAM-III Will Meet in Crete

The Greek island of Crete will be the site of the third international conference on probabilistic safety assessment and management, PSAM-III, in June 1996. The organizers are SRA member Ioannis Papazoglou of the Institute of Nuclear Technology and Radiation Protection in Attiki, Greece, and Carlo Cacciabue of the European Union's Joint Research Center in Ispra, Italy. PSAM-III will combine with the 1996 annual meeting of the European Safety and Reliability Association, one of PSAM's founding sponsor organizations.

For more information on PSAM-III or to offer help, contact Papazoglou at fax number 30-1-653-3431 or Cacciabue at fax number 39-332-785-813.

SRA Specialty Groups

Specialty Groups Solicit Ideas

The Society for Risk Analysis specialty groups encourage members to share their ideas of topics for the 1994 SRA Annual Meeting in Baltimore with the appropriate contact persons listed below. (Several topics were listed in RISK newsletter, First Quarter 1994.)

Ecological Risk Assessment Specialty Group – Laura A. Haselow, Westinghouse Savannah River Company, 1995 South Centennial Avenue, Building 4, Aiken, South Carolina 29803, telephone (803) 644-6766, fax (803) 644-6922.

Engineering Specialty Group – Robert J. Mulvihill, PRC Inc., 222 N. Sepulveda Boulevard, Suite 1310, El Segundo, California 90245, telephone (310) 640-1050, fax (310) 640-2207. Mulvihill, who chairs the group, has suggested some session topics including industrial plant risk, aerospace risk, and programmatic risk, which is the integration of technological risk with financial risk factors.

Exposure Assessment Specialty Group – Robert Fares, Versar Inc., 6850 Versar Center, Springfield, Virginia 22151, telephone (703) 642-6863, fax (703) 642-6954; or **Thomas E. McKone**, Lawrence Livermore National Laboratory, P.O. Box 808, L-453, Livermore, California 94551, telephone (510) 422-7535, fax (510) 423-6785, e-mail mckone1@llnl.gov.

Risk Communication Specialty Group – Virginia Sublet, University of Cincinnati, P.O. Box 8304, Cincinnati, Ohio 45208, telephone (513) 321-6704, fax (513) 321-6704.

Several members of the **Risk Communication Specialty Group** have responded with their suggestions for the list of

key risk communication resources that the group is compiling. Those who have not yet contributed their five references should send them to Karen Irons at the SRA Secretariat (see address on page 12).

Dose Response Group Organizing

A small working group is studying the formation of a new specialty group on dose response assessment. "The next steps are to secure two more members for the working group and to initiate a series of monthly conference calls," said Michael Dourson of the U.S. Environmental Protection Agency in Cincinnati, Ohio.

Dourson, who is heading the effort, plans to solicit the additional working group members from the areas of industry and academia. Current members are Kenneth Bogen of Lawrence Livermore National Laboratory in Livermore, California; Helen Goeden of the Minnesota Pollution Control Agency in Minneapolis; Richard Hertzberg of the EPA in Cincinnati; and Vickie Tatum of the National Council of the Paper Industry for Air and Stream Improvement in Gainesville, Florida. SRA Secretary Gary Flamm, who chairs the Specialty Group Committee, is the group's liaison to the SRA Council.

"The purpose of the monthly conference calls is to create bylaws for the specialty group," said Dourson. "However, we also need to first discuss why such a group would be needed by our society and, if so, what its objectives might be."

Anyone who is interested in participating in the monthly discussions should contact Dourson by telephone at (513) 569-7533 or by fax at (513) 569-7916.

U.S. Chapter News

Columbia-Cascades

Steven Nicholas, the director of Seattle, Washington's Environmental Priorities Project, met with the Columbia-Cascades Chapter in March and presented Seattle's plan to integrate its environmental policies and actions with various regional, state, and federal regulatory agencies using the U.S. Environmental Protection Agency's comparative risk assessment process.

Metropolitan

The Metropolitan Chapter (Connecticut - New Jersey - New York) and the New York State Bar Association's Environmental Law Section will sponsor a conference titled "Superfund: What's Needed and Why" on June 21 and 28, 5:30 to 9 p.m., in the auditorium of the United Engineering Center in New York City. The conference will focus on key Superfund problems and discuss solutions. Advance registration of \$45 for both sessions or \$25 for one session, including a light buffet supper, is available until June 13. To register, contact Wayne Tusa, Environmental Risk and Loss Control Inc., telephone (212) 369-5400.

New England

The New England Chapter has begun work on establishing relationships between environmental scientists and risk analysts in the U.S. and the former U.S.S.R. Heading the project is Alexander Shlyakhter of Harvard University, who has received 20 responses. Shlyakhter invites all SRA members involved in projects in Eastern Europe to contact him by e-mail at shlyakhter@huhepl.harvard.edu.

At the chapter's most recent meeting, Krishna Mudan of Four Elements Inc. spoke on the topic "Risk Management in the Chemical Process Industries," and Alison Cullen and Susan Korrick of Harvard University presented "Harvard's Study of PCB Exposure in Greater New Bedford."

Northern California

Two Northern California Chapter members presented the National Acad-

U.S. Chapter Contacts

Columbia-Cascades: Jim Dukelow, president, telephone (509) 372-4074, e-mail js_dukelow@ccmail.pgov.
East Tennessee: Joe Minarick, president, (615) 481-2117.
Greater Pittsburgh: Gregg Claycamp, president-elect, (412) 967-6524.
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Northern California: Tom McKone, secretary, telephone (510) 422-7535, e-mail mckonel@llnl.gov.
Ohio: Jon Reid, president, (513) 588-1723.
Philadelphia: Michael Jayjock, president, (215) 641-7480.
Research Triangle: Annie Jarabek, president (919) 541-4847.
Rocky Mountain: Dennis Smith, president (303) 933-8875.
Southern California: Mardy Kazarians, president, (818) 242-0401.

emy of Sciences study "Science and Judgment in Risk Assessment" at the chapter's May meeting. Report committee members D. Warner North of Decision Focus Incorporated and Kenneth T. Bogen of Lawrence Livermore National Laboratory gave their views on what implications the report would have for future applications of risk assessment to U.S. environmental issues. At the meeting, the chapter also selected candidates for summer elections.

Research Triangle

In March, the Research Triangle Chapter heard perspectives on the National Academy of Sciences' 1994 report on "Science and Judgment in Risk Assessment." Speakers included NAS report committee member Roger McClellan of Chemical Industry Institute of Toxicology; John Vandenberg of EPA's Research to Improve Health Risk Assessment Program; and Dianne Byrne of EPA's Office of Air Quality Planning and Standards.

Other recent speakers have been H. Christopher Frey of North Carolina State University ("Dealing with Uncertainty and Variability in Probabilistic Exposure Assessment") and Bruce C. Allen of ICF Kaiser International ("Benchmark Dose Modeling for Reference Dose Estimation: Application to Developmental Toxicity").

Rocky Mountain

The Rocky Mountain Chapter officers are involved in a forum seeking to improve information exchange between various societies in the area. A local societies night is planned for the fall.

The chapter met with the local Health Physics Society chapter to hear Owen Hoffman of SENES of Oak Ridge Inc. speak on "Developing Better Quality Information to Enhance Risk Management Decision Making." At the most recent chapter meeting, Alison Cullen of the Harvard School of Public Health outlined her work in the development of distributional methods of risk assessment.

Southern California

"The Northridge Earthquake — Lessons for Risk Analysts" was the presentation of Mayasandra K. Ravindra of EQE International Inc. at the Southern California Chapter's April meeting. He focused on the damage surveys of the performance of engineered facilities in the earthquake and the implications to the risk analysis community.

The chapter, along with cosponsors, hosted its 7th Annual Workshop titled "Current Issues in Risk Management and Human Health" on May 19 at the University of Southern California.

Calendar of Events

June 8. **U.S. Environmental Protection Agency's Health Effects Research Laboratory Open House.** (See page 8.)

June 10. **Spring Meeting and Symposium of Society for Risk Analysis—Japan.** (See page 7.)

July 1. **Call for abstracts of papers for a special issue of *Evaluation and Program Planning* on innovative methodologies for longitudinal evaluations of human service problems.** Contact Carol Mowbray (313) 577-4436 or Douglas Luke (517) 353-0871, School of Social Work, Wayne State University, Detroit, MI 48202.

July 10-14. **Fifth U.S. National Conference on Earthquake Engineering,** Chicago, Illinois. Contact Earthquake Engineering Research Institute, 499 14th Street, Suite 320, Oakland, CA 94612-1902, telephone (510) 451-0905, fax (510) 451-5411.

July 12-14. **High Consequence Operations Safety Symposium.** (See page 8.)

August 20-26. **Frontiers of Statistical Ecology and Ecological Statistics, Sixth International Congress of Ecology,** Manchester, United Kingdom. Contact G.P. Patil, Center for Statistical Ecology and Environmental Statistics, Department of Statistics, Pennsylvania State University, University Park, PA 16802, telephone (814) 865-9442, fax (814) 863-7114, e-mail gpp@psuvm.bitnet.

August 24. **Symposium on Environmental Risk Decision Making: Values, Perceptions and Ethics.** (See page 8.)

September 13-17. **International Symposium on Assessing and Managing Health Risks from Drinking Water Contamination: Approaches and Applications,** Istituto Superiore di Sanita (ISS), Rome, Italy. Contact Eric G. Reichard, U.S. Geological Survey, Water Resources Division, 5735 Kearny Villa Road, Suite O, San Diego, CA 92123, telephone (619) 637-6834, e-mail ereich@s101pcasnd.wr.usgs.gov.

September 18. **Reference House Workshop: Residential Exposure Assessment for the '90s.** (See page 8.)

September 18-21. **Joint Conference of the International Society for Environmental Epidemiology and the International Society for Exposure Analysis,** Sheraton Imperial Hotel, Research Triangle Park, North Carolina. Register by August 1 to save \$50. Contact Phylliss Woody, Registrar, University of North Carolina School of Public Health, Office of Continuing Education, telephone (919) 966-4032, fax (919) 966-5692.

October 17-20. **Ninth Annual Conference on Contaminated Soils,** University of Massachusetts at Amherst. Contact Paul Kostecki, Environmental Health and Sciences, N344 Morrill, University of Massachusetts, Amherst, MA 01003, telephone (413) 545-2934, fax (413) 545-4692.

October 23-27. **Sixth North American International Society for the Study of Xenobiotics Meeting,** North Carolina State University's Continuing Education Center, Raleigh, North Carolina. Deadline for abstracts and early registration at reduced rates is June 15. Contact 6th North American ISSX Meeting, c/o Department of Toxicology, Box 7633, North Carolina State University, Raleigh, NC 27695, telephone (919) 515-2274, fax (919) 515-7169

October 30 - November 3. **Fifteenth Annual Meeting of the Society of Environmental Toxicology and Chemistry,** Colorado Convention Center, Denver. The topic is "Ecological Risk: Science, Policy, Law, and Perception." Contact the society's Executive Director Rod Parrish at SETAC, 1010 North 12th Avenue, Pensacola, FL 32501, telephone (904) 469-1500, fax (904) 469-9778.

October 31-November 3. **Conference on Applied Environmental Assessment: Site Characterization and Risk Assessment,** Sheraton Plaza Hotel, Orlando, Florida. Register by October 1 to save \$50.

(Continued on page 12.)

Risk Courses

July 11-15. **Third Summer Institute in Environmental Law,** Robert F. Wagner Graduate School of Public Service, New York University, New York City. Covers environmental laws in air and water pollution control, toxic substances, drinking water, hazardous wastes and solid waste management from the perspective of property transfers, liability, public disclosure, citizens' suits, enforcement, the application of health and environmental standards, and other topics. Courses are scheduled 9 a.m. to 5 p.m. Contact Rae Zimmerman, Course Director, Wagner Graduate School of Public Service, New York University, 4 Washington Square North, New York, NY 10003, telephone (212) 998-7432 or -7450.

July 11-15. **Recent Developments in Environmental Health Risk Assessment,** University of Limburg, Maastricht, Netherlands. Focuses on recent developments and insights concerning applications of environmental health risk modeling; introduces recent case studies of risk assessment in relation to air, soil, drinking water, and food contamination; and provides information about applicability of health risk assessment in environmental policy making. Contact Annie Simon, Summer University, Health Sciences and Medicine, telephone (31) 43-881552, fax (31) 43-881552.

July 18-22. **Simulation Models and Risk Assessment,** University of Limburg, Maastricht, Netherlands. Course will enable partici-

pants to understand model building, including new developments and applications such as standard setting and extrapolation of animal data. Contact Annie Simon (see July 11-15 entry).

August 15-19. **Occupational & Environmental Radiation Protection,** Harvard School of Public Health, Harvard University, Boston, Massachusetts. Course on basic radiation protection. Contact Kathryn Lord, Harvard School of Public Health, Office of Continuing Education, 677 Huntington Avenue, LL-23, Boston, MA 02115-6023, telephone (617) 432-1171, fax (617) 432-1969.

August 22-26. **Advanced Workshop on Occupational and Environmental Radiation Protection,** Harvard School of Public Health. Covers the latest developments and issues related to the workshop's subject. Contact Kathryn Lord (see August 15-19 entry).

August 29-30. **New Horizons in Risk Assessment.** (See page 1.)

September 27-30. **Analyzing Risk: Science, Assessment & Management,** Harvard School of Public Health. Topics include the scientific bases of risk assessment of chemicals and radiation in toxicology and epidemiology, methods of computing risk estimates, advances in the field, and the role of these tools in communicating with the public and decision makers. Contact Kathryn Lord (see August 15-19 entry).

(Continued on page 12.)



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Calendar of Events

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Contact Sue Huckaba, Oak Ridge National Laboratory, P.O. Box 2008, Bldg. 7509 - MS 6383, Oak Ridge, TN 37831-6383, telephone (615) 576-2100.

November 3-5. **National Food Processors Association 87th Annual Convention**, Los Angeles Biltmore, Westin Bonaventure, Los Angeles, California. Contact Cindy Wallach, NFPA Director of Meetings and Conferences, telephone (202) 639-5923.

December 4-7. **Society for Risk Analysis 1994 Annual Meeting**, Hyatt Regency, Baltimore, Maryland. (See page 2.)

May 8-10, 1995. **ESREL '95 Conference and Exhibition**. (See page 8.)

May 21-24, 1995. **Fifth Conference of the Society for Risk Analysis-Europe**. (See page 7.)

July 2-6, 1995. **VII International Congress of Toxicology - Horizons in Toxicology: Preparing for the 21st Century**, Seattle, Washington. Contact ICT VII, c/o Society of Toxicology, 1101 14th Street, N.W., Suite 1100, Washington, DC 20005-5601, telephone (202) 371-1393, fax (202) 371-1090.

Risk Courses

(Continued from page 11.)

October 4 - November 22. **Environmental Impact Assessment: Process and Procedures**, Robert F. Wagner Graduate School of Public Service, New York University, New York City. Course encompasses methods and techniques for conducting and evaluating environmental impact assessments in the context of federal, state, and selected local regulatory requirements. Reviews techniques and procedures for conducting and evaluating impact assessments for public and private development projects. Evaluates impact assessment processes in terms of legal, regulatory, administrative, and policy dimensions. Eight sessions on Tuesdays, 6:10-7:50 p.m. For more information, contact Rae Zimmerman (see July 11-15 entry).

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