

Safety Engineering & Risk Analysis Division



Newsletter

3rd Quarter 2007

NEW SERAD NEWSLETTER!

Fellow SERAD Members,

First, let me thank you all for your continued support of, and participation in SERAD and ASME. On June 30, 2007, I completed my five-year term as a member of the SERAD Executive Committee (EC). During those five years, I had the privilege to work with many very talented individuals, and to have met many of you at SERAD's IMECE sessions and Awards dinners.

Five years went by quickly, and recently, I found myself wondering how to continue my active involvement in SERAD, how to further the objectives of the Division, and how to increase the value of being a SERAD member. After many discussions in our EC meetings, we concluded that a SERAD newsletter was one avenue for enhancing that member value.

This is the first of what we intend to be an ongoing series of SERAD newsletters. The topics of this newsletter will include:

- View from the EC - general Division news.
- Upcoming safety and reliability events.
- Technical articles submitted by YOU.
- Interviews with leaders in the fields of Safety Engineering, Risk Analysis, etc.

I am excited about this newsletter, and I have committed to the current SERAD EC that I will lead the effort to bring it to you. However, I cannot do this alone, and so I am looking for volunteers to assist me. If you have an interest in working on the newsletter in any capacity, please contact me at either the email address or telephone number listed in the contacts section at the end of this newsletter.

Also, if you have an idea for a technical article, please submit those as well.

Thank you again,

Ward O. Baun III

SERAD EC Chair, July 1, 2006 – June 30, 2007

SERAD Advisory Committee, July 1, 2007 - ???

GENERAL DIVISION NEWS

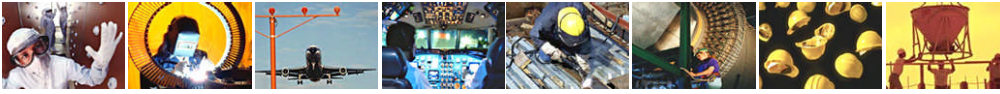
SERAD IMECE 2006 Program & Dinner A Success

The SERAD Program at the 2006 IMECE in Chicago, Illinois last November was a resounding success. The 2006 SERAD session got off to a great start at the Awards Dinner held on Sunday evening, November 5th. Over 30 attendees enjoyed a festive evening, including a cocktail hour, dinner, a captivating talk, the presentation of a number of awards, and the dramatic suspense that only a door prize raffle can provide!



Photo from the 2006 SERAD Awards Dinner in Chicago

The guest speaker for the evening was Dr. Douglas Woolley, Professor Emeritus, Radford University. Dr. Woolley spent over 30 years at Radford University as a professor of economics. Following Hurricane Katrina, he was asked by the Institute for Water Resources, an independent arm of the Army Corps of Engineers, to participate in a review of the decisions made regarding the construction of the hurricane protection system in and around New Orleans. His talk was entitled, "A Risk Case History: Decisions on the Hurricane Protection System in New Orleans Prior to Katrina", and provided an intriguing look into 50+ years of the risk-based methods and decisions that were made regarding this system, with the ultimate catastrophic outcome.



A number of awards were presented after the dinner. At the top of the list, an ASME Distinguished Service Award was presented to Dr. Michael Stamatelatos, Director, Safety Assurance Requirements Division at NASA Headquarters in Washington, D.C. This prestigious award was given to Dr. Stamatelatos in recognition of his tireless efforts on behalf of SERAD during his five years on the SERAD EC, as well as more recently as a member of the SERAD Advisory Board. He has been an example to all SERAD EC members who have followed in his stead.

Next, Dr. Bilal Ayyub of the University of Maryland received an award in recognition of his service as a member of the SERAD EC from July 2001 – July 2005, culminating in his chairmanship in 2005 – 2006. Following that, awards were given to Dr. Achintya Haldar of the University of Arizona in recognition of his outstanding service as the SERAD 2006 IMECE Program Coordinator, and to Dr. Woolley for his efforts as the Dinner Speaker.

Brian Brady, longtime organizer of the SERAD Student Safety Contest, presented the winners of the 2006 SERAD Student Safety contest were presented with their awards. The winners - William Best, Kurt Blomquist, Jason Giaquinto, Corey Kinard, and Jeffrey List - were from North Carolina State University, College of Engineering, Department of Mechanical and Aerospace Engineering; they were advised by Dr. Gracious Ngaile. Their winning design was for an "Autonomous Tie Plate Insertion Machine" to be used by the railroad industry.

Closing out the evening, the door prize, a one-year paid subscription to the Elsevier journal **Reliability Engineering and System Safety**, was won by none other than Brian Brady – a fitting award for someone who has tirelessly managed the SERAD Student Safety contest for many years.

The SERAD technical sessions in Chicago were well-attended, and included many stimulating talks on advances in our field. A highlight of the SERAD program was the Panel Session focusing on the topic, "**Are Risk-Based Methods Mature Enough for Engineering Applications?**" Panelists Dr. Achintya Haldar, Dr. Sankaran Mahadevan, Johnathan Young, and Peter Prassinis lead a lively discussion on the merits, drawbacks, and technical challenges to adoption of these methods.

UPCOMING EVENTS

SERAD IMECE 2007 Program and Dinner – Expected Continued Success

Following in the footsteps of last year's successful SERAD program in Chicago will be difficult. Nonetheless, the IMECE 2007 program is well on its way to doing just that. SERAD will have seven technical sessions and one panel session at IMECE

2007, with four to five papers in each session. Session topics will include Safety Engineering, Risk Analysis, Reliability Methods, and Product/Process Safety. The panel session topic is "Risk Assessment Software", and promises to be a continuation of the successful panel session last year. Sessions are planned for Tuesday, November 13th and Wednesday, November 14th.

The 2007 SERAD Awards Dinner is planned for Monday evening, November 12, 2007 from 7 – 10 PM. The dinner speaker will be **Emmett Peter, Director of Worldwide Safety & Assurance at Walt Disney Parks and Resorts, and his talk will be "Safety at the Walt Disney Corporation"**. You can buy a ticket to this event when registering for the IMECE conference online.

SERAD EC Meeting at IMECE 2007

As in the past, the SERAD Executive Committee will hold a face-to-face committee meeting at IMECE 2007. The meeting will be held on Monday, November 12 from 3:00 PM – 5:00 PM. The meeting location will be announced in the materials provided at the registration desk in Seattle.

TECHNICAL CORNER

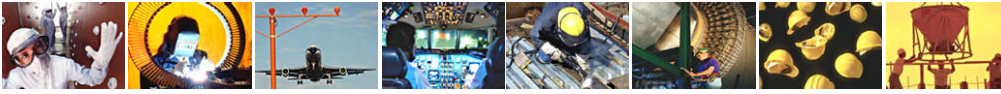
On the Use of Risk Assessment to Establish Permit Limits for Facilities Burning Hazardous Waste as Fuel - Summary of U.S. Court of Appeals for District of Columbia Decision

Article Submitted by: David A. Weeks, P.E.

Introduction

The United States Court of Appeals for the District of Columbia Circuit issued a decision on July 13, 2007 regarding the use of risk assessment to establish permit limits for boilers, incinerators, and cement kilns that burn hazardous waste as fuel. The Petition was filed by the Cement Kiln Recycling Coalition (CKRC) in response to a U.S. EPA regulation promulgated at 40CFR § 270.10(l) under the authority of the Resource Conservation and Recovery Act (RCRA). The Petition also concerned a supporting risk assessment guidance document (known as the HHRAP). The purpose of the regulation and guidance document was to provide permitting agencies with the authority and guidance to require a risk assessment in situations in which Maximum Achievable Control Technology (MACT) regulations issued pursuant to the Clean Air Act (CAA) were not protective of human health and the environment.

The Court determined that: the Petition was ripe for review; the regulation was not arbitrary or capricious; and that it was issued in accordance with the necessary procedures required by law. The Court also determined that the guidance document was not being used in place of a regulation that had not undergone the procedural requirements of the Administrative Procedures Act.



CKRC Petition

The CKRC argued that the EPA regulation requiring Site Specific Risk Assessments (SSRA) for hazardous waste combustors was arbitrary and capricious and not in accordance with law because:

1. It failed to spell out the information that is required in a permit application;
2. It was impermissibly vague with respect to the trigger for requiring an SSRA;
3. EPA failed to provide adequate notice of part of its rationale for the SSRA program, and likewise failed to respond to the Coalition's significant comments.

With respect to the guidance document, the CKRC argued that it did not reflect a policy statement but was in essence a legislative rule that is subject to the procedural requirements of the Administrative Procedures Act.

The Court's Analysis

The Court's opinion consisted of 38 pages of text and addressed each element of the CKRC Petition in detail.

Regulation

CKRC's first line of attack on the regulation was based on its contention that the regulation itself did not specify the information to be submitted in a RCRA permit application under the SSRA program and that the required information was instead specified in the guidance document. The Court responded by stating that the regulation did in fact state the required information noting the language specified that additional information "necessary to determine whether additional controls are necessary to ensure the protection of human health and the environment" and includes "information necessary to evaluate the potential risk to human health and/or the environment resulting from both direct and indirect pathways." The Court also noted that the regulation then specifies nine specific factors that permitting authorities should consider in determining whether or not a SSRA should be conducted. The Court noted that "RCRA § 3005(b) does not mandate any particular level of specificity at which EPA must define the information required in permit applications" and that under applicable case law it must defer to a reasonable EPA interpretation as to the degree of detail required.

CKRC's second line of attack centered on the fact that EPA did not define a specific, quantitative, level of risk in the regulation at which the SSRA requirement would be triggered. The Court responded by stating that nothing in the statutory language itself or the case law requires EPA to set such a standard and that EPA's argument that a case-by-case approach was appropriate

because no national risk threshold could address unique site specific considerations.

CKRC contended in its third line of attack that EPA failed to provide adequate public notice as to why the SSRA requirement applied to only hazardous waste combustors and not other hazardous waste treatment, storage, and disposal facilities (TSDF), and that EPA failed to respond to CKRC's critical comments. The Court found that adequate notice was implicit in the rule making itself since its purpose was to integrate CAA MACT standards with specific RCRA standards for hazardous waste combustors. The Court also found that EPA did adequately respond to CKRC's comments noting that "In the Final Rule, EPA specifically noted the Coalition's comments."

Guidance Document

CKRC attacked the HHRAP guidance document by stating that it had binding effects on private parties and permitting agencies. It relied almost exclusively on a prior Court ruling in *Appalachian Power Co. v. EPA* in which the Court found that the EPA guidance document was in fact a binding legislative rule. However, the Court noted that unlike in *Appalachian Power Co. v. EPA*, the HHRAP document did not command, order, dictate, or require. Rather, the language of the HHRAP was "replete with words of suggestion" because its provisions were described as recommendations that permitting authorities "were encouraged to consider." The Court also noted that CKRC's Petition did involve any specific case where the guidance has been used as a regulation.

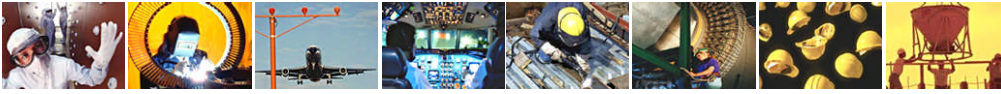
Conclusion

In conclusion, the Court denied all aspects of CKRC's petition except that the Petition itself was ripe for review.

Envision your article here next issue!!

For future issues, we want to hear from you! Please submit articles of technical interest to the editors for consideration for publication in this section. These articles can be examples of applications of Safety Engineering, Risk Assessment, Reliability engineering techniques in your field, or can be examples of novel approaches in these areas.

Submit your ideas and articles to either of our co-editors, Ward Baun at ward.baun@utcpower.com, or David Weeks at daweeks@rmeltd.com



THANKING SERAD CONTRIBUTORS!

The members of the SERAD Executive Committee would like to thank the following sponsors of the 2006 SERAD Awards Dinner, and the 2006 SERAD Student Safety Contest. The contributions of these organizations and individuals continue to make a positive difference for SERAD's members, and for the students who participate each year in the Student Safety Contest.

2006 SERAD Awards Dinner Sponsors:



2006 SERAD Student Safety Contest Sponsors:



SERAD VOLUNTEER OPPORTUNITIES

SERAD Newsletter: Assistance with all aspects of the development and publication of this newsletter. This may include review of technical articles submitted, interviewing of experts, editing articles, concept development. If interested, contact Ward Baun at (860) 727-7234 or at ward.baun@utcpower.com

SERAD Awards Dinner Committee: Organization of the annual SERAD Awards dinner, typically held at ASME IMECE in November. Duties would include finding a guest speaker, arranging for a banquet room, selection of dinner menu, sending invitations. Contact any of the SERAD Executive Committee members listed in the Contacts section of this newsletter.

SERAD Technical Paper Committee: Peer review technical papers for SERAD sessions at any future conferences. Contact any of the SERAD Executive Committee members listed in the Contacts section of this newsletter.

SERAD Website Maintenance: Assistance with all aspects of maintaining the SERAD website, updating content for the website. Contact any of the SERAD Executive Committee members listed in the Contacts section of this newsletter.

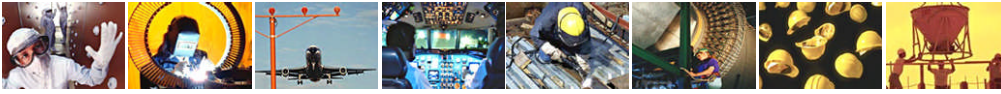
REMINDER

Remember that one of the benefits of being a SERAD member is the opportunity to purchase a subscription to the Elsevier journal, *Reliability Engineering and System Safety*. Normally not available to individuals, as a SERAD member, you can purchase a year-long (12 issue) subscription to this valuable journal for \$156. See the Important Website Links section below for a hyperlink to the order form on the SERAD website.

IMPORTANT WEBSITE LINKS

IMECE 2007: <http://www.asmeconferences.org/congress07/>

Elsevier Journal, "Reliability Engineering and System Safety" SERAD Member Order Form:
<http://divisions.asme.org/serad/publications/SERADRESSformembers07.pdf>



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IMECE 2007

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