

CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES

TRIP REPORT

SUBJECT: 2004 ASME International Mechanical Engineering Congress and
RD&D Expo (20.06002.01.351)

DATE/PLACE: November 16-18, 2004; Anaheim, CA

AUTHOR: G. Adams

DISTRIBUTION:

CNWRA

W. Patrick
CNWRA Directors
CNWRA Element Managers
Performance Assessment Staff
MGFE Staff

NRC-NMSS

B. Meehan
D. DeMarco
W. Reamer
E. Whitt
E. Collins
L. Kokajko
T. McCartin
M. Bailey
K. Stablein
F. Brown
J. Guttman
G. Hatchett
B. Leslie
R. Codell
K. Compton
T. Ghosh
T. Kobetz
M. Nataraja
B. Jagannath
Y. Kim
R. Johnson
C. Rider
D. Galvin
A. Ibrahim
T. Ahn
D. Rom
D. Dancer

SwRI Contracts

Record Copy B, IQS

CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES

TRIP REPORT

SUBJECT: 2004 ASME International Mechanical Engineering Congress and RD&D Expo (20.06002.01.351)

DATE/PLACE: November 16-18, 2004; Anaheim, CA

AUTHOR: G. Adams

PERSONS PRESENT:

G. Adams of the Center for Nuclear Waste Regulatory Analyses (CNWRA) participated in the Nuclear Engineering (NED-1) Session at the 2004 ASME International Mechanical Engineering Congress and RD&D Expo on November 17, 2004. Hundreds of professionals from various organizations attended this Congress and Expo which included over 550 sessions.

BACKGROUND AND PURPOSE OF TRIP:

The purposes of the trip were to present CNWRA research to the scientific and engineering community and interact with other researchers to gain knowledge on areas of research that may be beneficial to the NRC and CNWRA.

SUMMARY OF PERTINENT POINTS and ACTIVITIES:

G. Adams presented, "An Abstracted Model for Estimating Temperature and Relative Humidity in the Potential Repository at Yucca Mountain" by S. Mohanty, G. Adams, and J. Menchaca. There were three other presentations during the Nuclear Engineering Session which contained a range of topics involving cracks in steam generator tubes to modeling a spent fuel extraction process. G. Adams attended additional sessions, including one on Rail Transportation.

In the presentation, "Development of Systems Engineering Model for Spent Fuel Extraction Process," by Hsieh, et al, University of Nevada - Las Vegas, a model was presented for optimizing an extraction process. The presentation showed the importance of having a modularized software package for integration of existing codes, retention of information stored to a database, as well as the presentation of data.

In the presentation, "Coalescence Criterion of Part-Through Wall Cracks in Steam Generator Tubes of Nuclear Power Plants," by Abou-Hanna, et al, Bradley University, analyses of crack failure of steam generator tubes was presented in which the interaction or coalescence of cracks is considered in determining coalescence (failure) pressure. These analyses showed good correlation with experimental results indicating that the analyses conducted were capable of predicting the coalescence pressure for part-through-wall cracks in steam generator tubes.

In the presentation, "Impact Tests of Crash Energy Management Passenger Rail Cars: Analysis and Structural Measurements," by Jacobsen, et al, Volpe Center - US DOT, results of using a Crash Energy Management (CEM) end structure on a rail car were discussed. This end

occur within the occupied volume of the rail car when this car was made to impact a fixed barrier. Without the end structure, intrusion occurred into the occupied volume of the rail car. There were two additional presentations which also discussed the development and impact tests of the CEM structure. These presentations were, "Two-Car Impact Test of Crash-Energy Management Passenger Rail Cars: Analysis of Occupant Protection Measurements" by Severson, et al, Volpe Center - US DOT, and "Development of Crash Energy Management Designs for Existing Passenger Rail Vehicles" by Martinez, E., et al, Volpe Center - US DOT.

CONCLUSIONS:

The conference provided an excellent opportunity to discover a broad range of technical topics that are applicable to the work that is currently being conducted at CNWRA. For example, presentations in the area of rail transportation provided insights into hazards and accident sequences that are applicable to the preclosure area. In addition, the presentation involving a systems engineering model showed the usefulness of a modularized software package for performing engineering and scientific analyses.

PROBLEMS ENCOUNTERED:

None

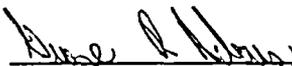
PENDING ACTIONS:

None

RECOMMENDATIONS:

None

SIGNATURES:

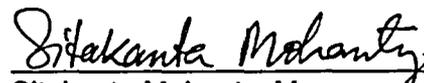


George Adams
Research Engineer

12/16/2004

Date

CONCURRENCE:



Sitakanta Mohanty, Manager
Performance Assessment

12/7/2004

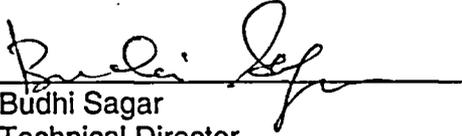
Date



Asadul H. Chowdhury, Manager
Mining, Geotechnical, and
Facility Engineering

12-06-04

Date



Budhi Sagar
Technical Director

12/07/04

Date