



CRITICAL COMMENTS

NEWS FROM THE
CRITICALITY SAFETY GROUP AT UNM

CHEMICAL & NUCLEAR ENGINEERING • UNIVERSITY OF NEW MEXICO • ALBUQUERQUE, NEW MEXICO • 87131-0001

Ever wonder

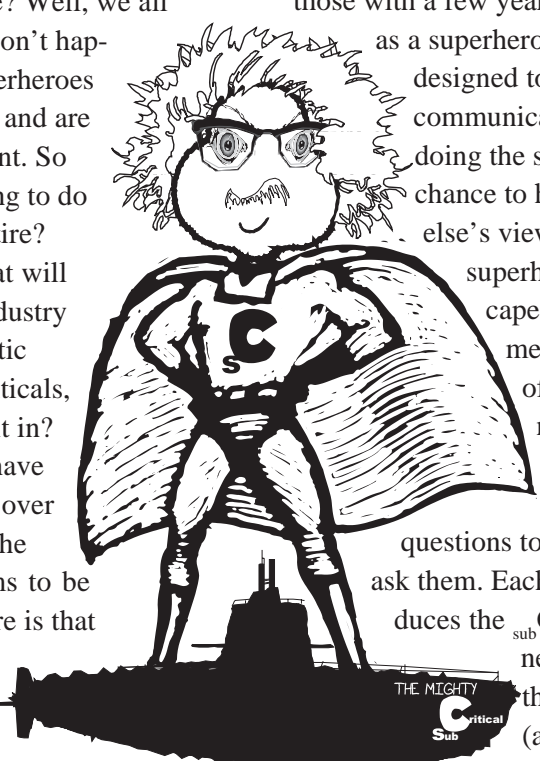
what would happen if all the superheroes had to retire? Well, we all know that that won't happen, but our superheroes are getting older and are nearing retirement. So what are we going to do when they do retire? Particularly, what will happen to the industry when that fantastic family, the _{sub}Criticals, decides to pack it in? The _{sub}Criticals have been with us for over sixty years, but the family tree seems to be dwindling. Where is that younger generation of superheroes; the ones that have the knowledge, experience, and know what questions to ask? Where can those new to the field of criticality safety get that knowledge and communicate with our superheroes? Well, obviously you know where this is going: to Albuquerque. It's that time again to remind all of our superheroes and those in training of the UNM summer courses in Nuclear Criticality Safety. So as we prepare our 26th annual UNM 5-day Nuclear Criticality Safety Short Course (July 11-15, 2005), it is a time to gather the _{sub}Critical family and maintain the family lore. For those of you new to the criticality safety family, the UNM short course provides a new

view of neutron behavior and a whole new set of semantics to go with it. For those with a few years of experience as a superhero, the course is designed to facilitate communication with others doing the same work; a chance to hear someone else's views. And for those superheroes whose capes need some mending, the course offers an opportunity to pass on the family lore; particularly what questions to ask and when to ask them. Each course introduces the _{sub}Critical family to new treasures in the family vaults (and yes, a few of the skeletons as well).

This is the basic philosophy of the UNM short courses. We don't spend much time on the technology, but we do provide faculty members with many years experience in the different aspects of nuclear criticality safety and students with a wide range of experiences. The overview of fundamentals offered in the 5-day short course is good for all of us regardless of our superhero experiences. The Double Contingency and Criticality Safety Evaluations course is an excellent opportunity to be review double contingency and learn how to communicate it in process evaluations; our 7th workshop is scheduled for July

19-21. For those aunts and uncles in the family (i.e., not directly involved in criticality safety evaluations), the 25th manager's workshop (this number includes the courses provided "on the road" for BNFL, Rocky Flats, Idaho Falls, and Hanford) is July 6-8. To enhance your superhero powers or just to get an online decoder ring that allows you to sign up for the courses, check our website. <http://www-chne.unm.edu/crit/information.htm>

Please take a few minutes to read this material and then communicate with others by passing it along. Remember, the next generation of _{sub}Criticals is out there waiting for us to help them know that there are no stupid questions, only those yet to be asked. If you have any comments, critical or otherwise, my email is busch@unm.edu.



What's Inside This Issue

Double Contingency Crit Safety eval	page 2
NCS Short Course	page 2
Managers Workshop	page 2
Accommodations	page 3
Registration Form	page 3

SUPER HERO COURSES

WOW

The Managers

July 6-8, 2005

\$1,000.00 includes lunches
deadline: June 10, 2005

the information presented at this workshop is designed for those people with oversight responsibility for criticality safety but not direct supervision of the criticality safety process. These may be managers who are in charge of all safety (fire, OSHA, crit, etc.) for a plant, or the plant manager. Anyone who needs to know what is involved in criticality safety and how it will affect their responsibilities should take this course. It is expected that they will leave the course with a better understanding of the criticality engineer's perspective of k-effective, validation, uncertainty, double contingency, rules, standards, and regulations. They will also understand the risks and the probability of a criticality accident; what is contained in a process analysis, and what is expected of management and supervisors in formulating and implementing a criticality safety program.

“I can't lose my name!
It's on all my stationary!!”

THE TICK

WHEESSSS

July 11-15, 2005

\$1,600.00 includes lunches
deadline: June 10, 2005

The Short Course

the purpose of the short course is to provide an overview of the theory and practice of nuclear criticality safety. The course content is directed toward the individual with less than two years experience in the field. However, one who is experienced in a particular aspect of the field may find the overview to be of value. Topics include, but are not limited to: Fundamentals of NCS, Nuclear Physics, Neutron Chain Physics, Administrative Controls, Double Contingency and Elements of a Criticality Safety Evaluation. Workshops on various topics scheduled throughout the week provide the attendee with practical applications for the subject matter. The program will be conducted by faculty drawn from universities, government, national laboratories, and industry.

“Life isn't a science. We make it up as we go.”
Al Hirschfeld

BWHOOOM!

July 19-21, 2005

\$1,200.00 includes lunches
deadline: June 10, 2005

DOUBLE CONTINGENCY & Crit Safety Evaluation Workshop

designed for criticality safety personnel with some experience doing assessments (evaluations) and some computer code experience (KENO, MCNP, MONK, DANTSYS). The participants will be divided into groups of three to four. Each group will be given an operation/process which is to be evaluated and for which limits and controls are to be determined. Each group will have a faculty observer/facilitator who will act as the “operations” representative. The group will be responsible for interviewing operations, identifying normal and off-normal conditions, parameters to be controlled, how the parameters will be controlled, limits, estimates of the k-effectives of different configurations, a summary of the assessment, and example postings and procedures. Each group will present their assessment to the faculty who will provide a critique of the results. The participants will have a chance to use handbooks, reports, manuals, and computer codes to evaluate the neutronics of the process and determine the sensitivity of k-effective to various parameters such as mass, concentration, reflection, etc.

Where do Super Heroes Stay?

Rooms are reserved at the Wyndham Albuquerque Hotel at International



Sunport • 2910 Yale Blvd SE, 505 843.7000. Please request a room from the NUCLEAR CRITICALITY SAFETY COURSES block of rooms.

A complimentary breakfast is included in the \$65.00 + tax per night room charge. Wyndham does provide a complimentary shuttle to and from the Sunport (aka Albuquerque Airport).

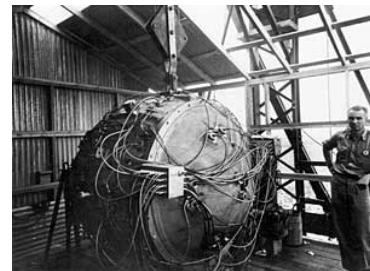
Reservation deadline for the Crit Safety Rate is **JUNE 20, 2005**.

from *Nuclear Times* • Newsletter for Member of the National Atomic Museum

Saturday July 16, 2005, marks the 60th anniversary of the Trinity test, the world's first nuclear detonation. Besides being open to the public on the traditional first Saturday of April and October, Trinity Site will also be open on this anniversary date. The National Atomic Museum Foundation will run a tour on July 16th, besides the regular ones of April 2 and October 1.

The 53,000 acre Trinity National Historic Landmark is normally closed to the public since it is located within the 3,200 square mile White Sands Missile Range. The Range is the year-round host to numerous non-nuclear tests that require plenty of room and high-security.

If you are interested in learning more about the Trinity test, two books are highly recommended, *The Day the Sun Rose Twice* (1984), by University of New Mexico Historian, Frank Szasz. The second, if you can find it, is *Dawn Over Zero: The Story of the Atomic Bomb* (1946), by New York Times science reporter, William L. Laurence. As the only reporter to witness Trinity and other aspects of the Project, including Nagasaki, Laurence wrote one of the earliest accounts of the test and of the eventual success of the Manhattan Project.



The museum is planning a special event around the anniversary, including the early morning tour of the site itself. For more information as it becomes available go to <http://www.atomicmuseum.com/>

PLEASE PRINT OR TYPE ALL INFORMATION AS YOU WISH IT TO APPEAR ON YOUR NAME BADGE

First Name: _____ Last Name: _____

Company Name: _____

Address: _____

Phone: _____ Fax: _____

Email: _____

Mailing address if different: _____



Summer Offerings

- Workshop for Managers • \$1,000.00
July 6-8, 2005
- Short Course • \$1,600.00
July 11-15, 2005
- Criticality Safety Assessments
Workshop • \$1,200.00
July 19-21, 2005

Method of Payment*

- Check
- Company Purchase Order
- Government Training Authorization
- Credit Card
 - MasterCard
 - Visa

CREDIT CARD NUMBER

EXPIRATION DATE (MM/DD/YY)

NAME ON CARD

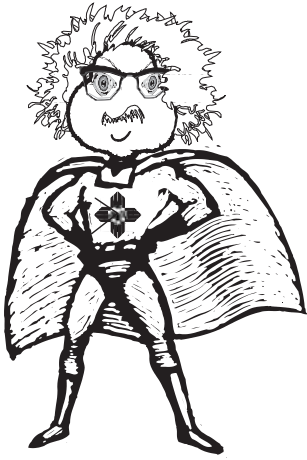
ADDRESS ALL CORRESPONDENCE TO:

Cheryl M. Brozena
Chemical and Nuclear Engineering
MSC01 1120
University of New Mexico
Albuquerque, NM 87131-0001
Phone: 505 277.2225
505 277.5431
Fax: 505 277.5433

*Class space is not reserved until payment is received

Checks Payable to: UNM/ChNE • US Dollars (drawn on a US Bank)

email: cbrozena@unm.edu
www-chne.unm.edu/crit/information.htm



Need Training? If you can't come to us, we will be willing to work with your Training Manager or Human Resource person and arrange a short course or workshop for a group of folks on site.

There are several in the works for later this year. Suggestions for future workshops and courses? Let us hear from you!

“ I have not failed.
I've just found 10,000
ways that won't work.”

THOMAS EDISON

“ Don't worry about the world coming to an end today.
It's already tomorrow in Australia.”

CHARLES SCHULTZ
PEANUTS CREATOR

This story was included in the 1998 Crit Comments Newsletter, figured it was time to run it again. It's an actual radio conversation released by the Chief of Naval Operations on October 10, 1995. Your call on the **REAL SUPERHERO!**

Station 1: Please divert your course 15 degrees to the North to avoid a collision.

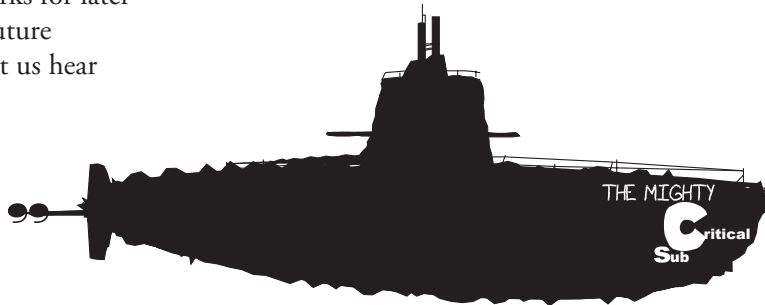
Station 2: Recommend you divert YOUR course 15 South to avoid a collision.

Station 1: This is the Captain of a US Navy ship. I say again divert YOUR course.

Station 2: No, I say again, you divert YOUR course

Station 1: This is the aircraft carrier Enterprise. We are a large warship of the US Navy. Divert your course now!

Station 2: This is the Puget Sound Lighthouse. It's your call.



CRITICAL COMMENTS
Chemical and Nuclear Engineering
MSC 01 1120
1 The University of New Mexico
Albuquerque, NM 87131-0001