

Witzig: nuclear energy, problems and potentials

Continued from Page 1.

COLLEGIAN: Why do you say that?
WITZIG: Two things make issue very clear. The first is the operating record.

We have about 700 reactor years of domestic experience. We have about 1,800 reactor years of experience in the nuclear Navy. Overseas there's at least 600 reactor years. You've got about 3,300 reactor years of operating experience.

At no time, domestically, overseas, or in the Navy, has there been a radiation associated fatality in a nuclear plant.

COLLEGIAN: What about the test reactor in Idaho? There were fatalities there in the early 1960s.

WITZIG: The SL-1 machine was an experimental Army-military-political kind of reactor. There were three fatalities. That was an experimental test reactor. There have been other lives lost.

There have been critical assemblies in Los Alamos (New Mexico) where lives have been lost. I'm talking not about experimental facilities. I'm talking about operating power units for naval propulsion or the production of electricity. That's the safest record of anything you can imagine. We can't touch it in coal or oil or gas. It's unbelievable, literally, that that statement can be made today, and that it is a true statement.

COLLEGIAN: Does that take into account possible health effects from radiation wastes?
WITZIG: I said there were two reasons to support the fact that nuclear energy is the safest. The first is the operating history of the plants. The second one is studies.

There have been a host of studies. There's the Wash 1400 (Rasmussen Report), The American

Medical Association Report which was put out in 1980, the American Physical Society, the Lewis Report, the West Germany reactor safety report. All of these, whether they were in the field or out of the field, like the AMA study, show that nuclear energy, over its total spectrum of the fuel cycle, not just the plant operation.

All of these show that nuclear energy is anywhere from 10 to 10,000 times safer than alternate forms of producing electricity. One study said natural gas production of electricity was a little bit safer than nuclear energy, but all the rest said it is 10 to 10,000 times safer. I'm talking about about radon releases from the mill tailings. If you look at the radon releases from mill tailings, it's less than 1 percent of the total radon releases naturally.

Freshly plowed ground contributes about 50 percent of radon releases. The radiation levels in many phosphorus plants far exceed the radiation levels we work with in the nuclear industry. They are not regulated at all, and they probably should be.

Another source of radiation that far exceeds that from nuclear energy is medical (uses of radiation).

So I said that it's two features which tell me clearly that it's the safest way we have, that's the record and the studies.

COLLEGIAN: Is that including the use of solar energy comparatively?
WITZIG: Yes. That's a good question. It turns out while nuclear energy is capital intensive, solar energy turns out to be materials intensive.

I'm saying this not about the passive solar energy uses, but active solar energy. If you take

for example, water heating on the roof, every square foot of a solar panel requires either tremendous amounts of silicate for glass or tremendous amounts of copper or aluminum. It roughly runs a pound a square foot.

The only time risks really begin to threaten us is when risks begin to crowd the national death rate. We can have fatalities one or two at a time and are widespread geographically, it's OK — witness automobile accidents. We kill 50,000 a year, but we only do it a couple at a time and we do it spread out geographically. That's a horrendously high rate. There's nothing that approaches it for risk. On the other hand you cannot kill a large number of people.

You cannot have fatalities bunched. In the nuclear aspect the probability is very low, but the consequences are a real-sized number and when some people look at just consequences and say "Gee, a nuclear plant could kill 10 people or it could kill 100 people," without multiplying that consequence by the probability, you get an impression which is erroneous.

COLLEGIAN: Some criticize the calculations of the probability of an accident.
WITZIG: Even when you take the critics' example and say it can be 10 times worse, when you take that anything you've got around.

COLLEGIAN: What happens when nuclear waste facilities reach their capacities? Where do we put the waste?
WITZIG: Radioactive wastes from medical therapy and diagnostics and low level radioactive wastes from nuclear power plants have roughly about the same bulk volume.

I suspect that we can either continue to reuse in that area or we're going to have to have other sites, but there need be no particular concern that those be filled. Low level radioactive waste can be very safely managed as well as high level waste.

COLLEGIAN: What happens to the high-level waste?
WITZIG: At the moment they're stored at the reactor as spent fuel. This is because of a government policy which said back in the '60s said "We will take care of the spent fuel. We will charge you in the reprocessing so you can have uranium a plutonium from it, but we will take the waste and put it into solid form and then into geological storage." The federal government hasn't done it. They are delinquent and derelict in that responsibility. They should have done it.

Radioactive waste can be safely stored in solid form where it's relatively non-leachable. And let me point out that such forms already exist in nature. There's a natural reactor that operated in Africa several billion years ago, and we know while the radioactivity has decayed away, many of the fission products are stable, non-radioactive, and we can tell from the analysis that they are still there.

COLLEGIAN: How long will the supply of uranium last?
WITZIG: If we have our present plants, it will last well into the next century, 2050 or thereabouts. If we use the breeder reactor to recycle uranium and plutonium, do you know that we have over 1,000 years of resources available in the breeder to supply all of the electricity of this country? That's really the Saudi Arabia, that's greater than our coal resources.

We have above ground today depleted uranium which will supply our electrical energy needs at a 4 percent a year growth for the next 100 years, in which we pay the environmental impact of mining and transportation and the first chemical processing that is involved. That's a tremendous energy resource for us: a millenium.

American Nuclear Society

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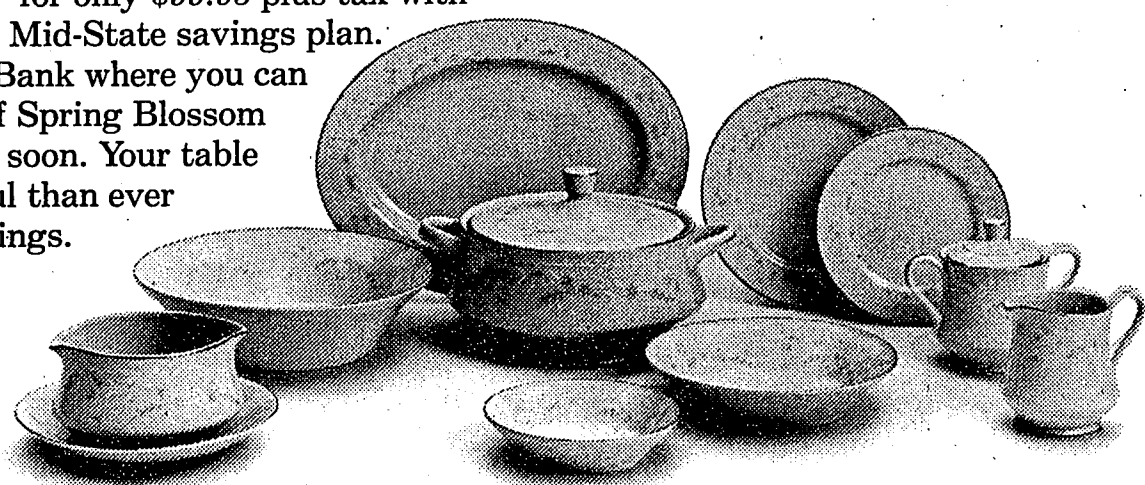
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I'm glad you are enjoying your trip.

Stay well. Write again if you have time. Love, Snoopy

F.S. Don't break any leash laws.

PEANUTS®

THAT WAS WONDERFUL, SKYLER!

BOY, IF SHE THINKS THAT WAS WONDERFUL...

SHE KNOWS LESS ABOUT THE PIANO THAN I THOUGHT.

SHOE

AND GENERALLY, SKYLER, I FEEL THERE'S BEEN AN OVERCROWD RESPONSE TO THE 1980 WIN STILL IN LIGHT OF EVIDENCE THAT THE WINNING TICKET HAS BEEN TERMINATED WHILE RUNNING A RED LIGHT.

SECRETARY HAS, APART FROM YOUR SICKENING IMPLICATION THAT THE MISS WERE GIVEN RESPONSIBILITY FOR THEIR OWN DEATHS, PERHAPS YOU CAN EXPLAIN HOW RUNNING A RED LIGHT WOULD RESULT IN THEIR BEING REAR RIPPED AND SHOT IN THE HEAD?

YES, CONGRESSMAN, I THINK I CAN.

SOME OF YOU MAY REMEMBER MY "SUSPECT CRIME" THEORY FROM WINTERGATE.

WONDERFUL. IT'S ABOUT TIME YOU GOT A POINT.

DOONESBURY

COLORS EASTER EGGS!

THANKS ALOT SUE!

SHOULDN'T YOU BOIL THEM FIRST?

BIFF AND AL

All afternoon, I'm open today... I have all my books and notes gathered and the room is perfect.

There's no reason I can't study this afternoon!

There's got to be a reason I can't study this afternoon!

JOEL

I HEAR YOU'RE HAVING TROUBLE WITH THAT IPR 410 CLASS.

NOT ANY MORE.

THAT'S GREAT. HOW DID YOU GET CAUGHT UP ON ALL THE WORK IN THERE?

I DIDN'T...

I DROPPED IT.

NORM

HEY, I'VE GOT A IDEA, LET'S GO CLIMB MT. WITANY.

ARE YOU CRAZED?

NO MAN, WE CAN FORGET ALL OUR EDUCATION HASSLES, EXPAND OUR MINDS AND GET IN TOUCH WITH NATURE.

HE SAID, LET'S GOT CLASSES, GET SPOONED AND STARE AT THE ROCKS AND TREES.

OH, LET'S GO, BOB!

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Chemistry (General I & II)
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Data Base/Assembler)
Economics (Macro/Micro/Money & Banking)
Engineering Technology (Strength of Materials/
Properties/Heat Transfer/Engineering Geology/
Surveying/Drawing/Instrumentation Design)
English (Comp./Lit./Speech)
Journalism (Copy Read/Intro. Writing/Photo)
Math (Algebra/Statistics/Trigonometry/
Calculus I/Calculus II/Linear Algebra)
Psychology/Sociology

The Daily Collegian Monday April 20, 1981-17

Crossword

by Mike Shenk
(Answers in Tomorrow's Classmate)

1	2	3	4	5	6	7	8	9	10	11	12	13
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Across
1. Shintons
2. Casino game
3. Teal glass item
4. Leash
5. Crownlike
6. Spring again, as a verb
7. Hair style
8. Spring period
9. State Department positions
10. Aviate
11. Harden
12. Soviet river
13. Bridge holding
14. Parts of feet
15. Les Etats
16. Part
17. Terminations
18. Romantic rendezvous
19. Alpine cover
20. State Department group
21. Play start
22. Perfumed one
23. In the fashion
24. Young here
25. Pieces of worship
26. In general
27. Agatha Christie's favorite writing place
28. Regretful ones
29. Type type
30. Feet of present
31. Yellow bellies
32. Les Etats
33. Orchestral musician
34. First name of a First Lady
35. "Thanks—!"
36. King and President
37. "Origin of the —"
38. Journey
39. At a distance
40. Wornman
41. Red — (play candles)
42. Agitated cry
43. Superior wena —
44. White; Prefix
45. Traffic light color

Down
1. One, to Otto
2. Teal glass item
3. Leash
4. Crownlike
5. Spring again, as a verb
6. Hair style
7. Spring period
8. State Department positions
9. Aviate
10. Harden
11. Soviet river
12. Bridge holding
13. Parts of feet
14. Les Etats
15. Part
16. Part
17. Terminations
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10:00 a.m. Fr. Edward Stanton - prominent activist in preventing plant closures
1:00 p.m. Tom Kahn - ass't. to the pres., AFL-CIO, expert on Polish Labor situation
Stanley Walesa - father of Solidarity leader Lech Walesa

INFORMAL WORKSHOPS HUB 3rd floor 2:30 - 4:00 p.m.

FEATURING:
1. Dennis Mumble, South African Dissident - South African Labor Movement
2. Lindsey Kayman, Labor Studies Dept. - Future of OSHA and Regament
3. Polish Labor Situation
4. Plant Closures

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