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## 9/11 Raises Nuke Plant Safety Stakes

Conference condemns Duke's proposal to use MOX fuel

BY SAM BOYKIN

Charlotte is ground zero for what some are saying could be the most dangerous and potentially catastrophic development of the nuclear age. That's the picture that developed during The Nuclear Insecurity Conference, held over the weekend at the Great Aunt Stella Center. A group of experts representing dozens of nuclear and environmental safety organizations gathered to discuss a host of issues. The main issue discussed, however, was Duke Energy's plan to use some 34 tons of weapons-grade plutonium at Catawba and McGuire nuclear power plants. This plan was devised following the end of the Cold War when Russia and America came to terms on how to reduce their nuclear arsenals. Both countries declared approximately 68 metric tons of plutonium as surplus (34 tons per country) – essentially, radioactive leftovers from thousands of nuclear weapons. It was agreed to take this surplus plutonium, one of the world's deadliest substances, and mix it with uranium, a far less radioactive material. This plutonium/uranium combination, known as MOX, would then be used as fuel in commercial nuclear reactors.

Officially known as the Surplus Plutonium Disposition Program, it was launched in 1998, and soon various power companies were clamoring for what promised to be a very profitable business deal. In 1999, the Department of Energy (DOE) finally selected Duke Engineering & Services (which Duke Energy recently announced it intends to sell to Virginia-based Framatome Advanced Nuclear Power) to carry out the plan, and the two companies entered into a contractual agreement.

Plans were launched for building a fabrication plant at the DOE's Savannah River Site near Aiken, SC. Weapons-grade plutonium from all across the country would be shipped there, where it would then be mixed with uranium and turned into MOX. From there, the MOX fuel would be transported via the roadways to the McGuire plant on Lake Norman and the Catawba plant on Lake Wylie, where it would be used as fuel.

CL first reported this plan in December 2000 and explained how groups like the Blue Ridge Environmental Defense League (BREDL) and the Nuclear Control Institute (NCI) criticized it as being inherently dangerous and rife with opportunities for disaster.

Duke Power spokespersons responded by saying the MOX fuel plan is a proven technology that is currently being used successfully in Europe. Moreover, they said Duke Energy is hardly a newcomer to the nuclear game, and they wouldn't have gotten involved without first thoroughly evaluating the MOX program. And bottom line, it had been determined that this was the best way to do away with an extremely volatile and dangerous material.

Of course, it's a different world now following 9/11, and there are some new developments concerning the MOX fuel plan. In order to address these changes and a host of other concerns, BREDL organized last weekend's conference, which among other things, included panel discussions and workshops.

"People from all over the nation have come to this conference because they see this area as a focal point for decision-making on nuclear reactor safety and terrorism," said Janet Zeller, Executive Director for BREDL. "The whole concept of plutonium fuel makes the Southeast, and particularly Charlotte, a real danger zone."

"The use of weapons-grade, plutonium-based fuel in Duke reactors – or any reactor – is a bad idea," said Don Moniak, BREDL community organizer and Savannah River Site project coordinator. "The less sense it makes the more it seems to gain in strength. The more expensive it becomes, the more funding it gets."

BREDL has been one of the leaders in the charge against the MOX fuel plan. The organization filed petitions in September and October 2001 with the Nuclear Regulatory Commission (NRC) to intervene in the license renewal of Duke Energy's Catawba and McGuire nuclear power plants, renewals that would extend the reactor's operating license for another 20 years. In November, BREDL and the Nuclear Information Resource Service (NIRS) also submitted a series of contentions against Duke's re-licensing request, questioning the stability and safety of

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Ed Lyman, Catherine Mitchell, Jim Riccio and Janet Zeller, speakers at the Nuclear Insecurity Conference (credit: Radok)

"The whole concept of plutonium fuel makes the Southeast, and particularly Charlotte, a real danger zone." - Janet Zeller of the Blue Ridge Environmental Defense League

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MOX fuel, and charging that the plant's reactor designs make them more vulnerable and prone to accidents.

Then on January, in an unprecedented move, the NRC Atomic Safety & Licensing Board granted the two agencies a hearing on Duke Energy's license renewal request. This was the first time such a hearing had ever been granted. Duke has since appealed the NRC board ruling, and as of press time, all parties were scheduled to meet on the February 12 to discuss the issue further.

**A Magnet For Terrorists**

While there are many points of contention regarding the MOX fuel plan, the critics and experts at last weekend's conference seemed to be most concerned about two issues. First, the type of reactors used at the McGuire and Catawba plants, and second -- in what has now taken on a far more ominous tone -- the threat of a terrorist attack.

Even before 9/11, many critics stated that MOX fuel -- particularly while it is being transported -- would be a moving bullseye for terrorists. If one of the shipments was attacked and a breach occurred, spilling the powdery contents into the air, the results would be genuinely catastrophic. Moreover, they said this project presented a unique opportunity for some rogue group to steal a shipment of the fuel, and use the plutonium to fabricate their own nuclear bomb.

Spokespeople for Duke Power said the chances of such an accident occurring were infinitesimal at best. They pointed out that the process used in making MOX fuel renders it nearly impossible to penetrate or divert for other purposes. Moreover, they said the DOE's special transportation fleet is charged with transporting such materials, as they have done for decades, and there has never been an accident or an attack.

Both sides, however, agree that things have changed since the terrorist attacks, particularly after a so-called "terrorist manual" was found recently in Afghanistan which included diagrams of American nuclear power plants and instructions to al-Qaida fighters on how to best carry out an attack.

"The President and FBI have indicated that we all need to be on alert," said Zeller. "The people of this region need to know the truth about the dangers and vulnerabilities of these power plants, and not just be reassured by happy talk. We need some real answers to incredibly hard questions. We're concerned that the proposed use of plutonium fuel at McGuire and Catawba will not only make the day-to-day operations of the plants more dangerous, but it will also make the Southeast and Charlotte a magnet for terrorists."

Tom Shiel, Duke Power senior communications specialist, says that on the contrary, 9/11 makes the MOX fuel plan all the more crucial.

"We feel that it's more important than ever," said Shiel. "What we're trying to do is get rid of the weapons-grade plutonium and make it unusable for nuclear weapons. This country needs to keep it out of the hands of terrorists. So we feel this program has taken on another level of importance.

"We have not received any threat against any of our facilities," Shiel continued. "As far as transporting MOX fuel, the DOE is responsible for that. When it is transported to our nuclear stations it will be in the form of fuel. The greater concern would be its transportation when it is still in weapons-grade form, which has nothing to do with this area."

**Living Next Door to Nuclear Power**

The type of nuclear reactors used at Catawba and McGuire are called ice-condenser reactors. Duke Energy personnel point out that these reactors have been reviewed and approved by the NRC, which has concluded that they pose no additional safety risks. Moreover, they say there are nine other plants in this country with such reactors, none of which have had a problem controlling nuclear materials since they were built over two decades ago.

Ed Lyman, science director for the Nuclear Control Institute, disagrees. "Studies have shown that ice-condenser reactors are much more vulnerable to a containment failure or serious accident than other types of reactors," he said. Lyman published a paper last year in which he discussed the health risks of using MOX fuel. In the paper he posits that if there is a breach within a reactor's core that contains at least 40 percent MOX fuel (which is consistent with what Duke wants to employ), there is a 25 percent increase in the number of cancer deaths.

"The MOX fuel plan is adding insult to injury," Lyman added. "These plants are already unusually vulnerable to a severe accident and pose a relatively high threat to the Charlotte area. To then put MOX fuel in the core is just incredibly dangerous. In my view, they (Duke) are choosing the riskiest reactors in which to perform a very dangerous experiment."

Critics say the proximity of the nuclear plants to heavily populated areas exacerbates the dangers of the MOX fuel program. Charlotte has the unsettling distinction of having two nuclear power stations and four nuclear reactors within 25 miles of its downtown. Moreover, about 265,000 people live within 10 miles of the McGuire and Catawba plants, a number that will continue to rise.

Duke Power claims that the nuclear plants' multiple barriers and security measures enable them to withstand a terrorist strike, including a direct hit from a jetliner. Nonetheless, other experts have said the plants are still vulnerable, and estimated it would take a maximum of eight hours to get people out of McGuire's federal emergency planning zone -- the 10-mile radius around the plant, which includes parts of Mecklenburg, Iredell, Lincoln, Gaston and Catawba counties. Moreover, the evacuation routes run through some of the fastest-growing communities in the Carolinas, many of which have been developed by Duke Power's sister company, Crescent Resources. This makes Duke Energy the only US nuclear plant operator to build subdivisions in its own evacuation zone.

"These reactors were originally constructed in rural areas," said Lyman. "But suburban development and sprawl have changed all that. That's certainly the case around McGuire. You can go out to some of these lakefront homes on Lake Norman and have a pretty good view of the reactors. The most shocking thing is that Crescent Resources is actually marketing and aggressively developing these areas. None of their sales materials, as far as I can tell, mention the fact that there is a nuclear plant nearby. That is corporate irresponsibility at its highest level."

Jim Riccio, nuclear policy analyst for Greenpeace, recently completed a report called *Risky Business*, which outlines the consequences of a nuclear accident in which Charlotte is prominently featured. Using the criteria of "peak early fatalities" (deaths that result from radiation exposure occurring within the first year) and "peak early injuries" (early radiation-related injuries that require hospitalization), the Catawba nuclear plant raked seventh among the top 12 offenders. Using the criteria of "cancer deaths" (deaths predicted to occur over the lifetime of the population exposed to the radioactive release), the McGuire plant ranked seventh among the "Dirty Dozen," tied with Three Mile Island.

"I didn't even get into the dangers of terrorist attacks," Riccio said. "These reactors were dangerous long before 9/11. Now there's the possibility of people purposely trying to melt these things down and use them as weapons. To my mind they should be rapidly phased out rather than have their license extended."

**What's Next**

No date has been set for the NRC hearing regarding Duke Power's license renewal of the Catawba and McGuire power plants. As of deadline, BREDL was scheduled to respond by Thursday to Duke's appeal. Shiel of Duke Power says the basis of their appeal is that the use of MOX fuel and the re-licensing of the nuclear plants are two separate issues, and should be dealt with as such.

"If and when we're ready to use MOX in our stations, we have to file an entirely new license application with the NRC," said Shiel.

"We haven't submitted anything to the NRC yet concerning this because we're still studying it. So the correct time for this to be discussed is when there is something before the NRC to be considered."

"Duke doesn't want a hearing – it's expensive and it's bad publicity," said Moniak of BREDL. Moniak also said that Duke Energy and the NRC's contentions that no action should be taken regarding MOX fuel until an application is submitted is foolhardy and dangerous. "They (NRC) say they have to wait for an application, but that is the latest point at which they should do something. The NRC is obligated to at least start analyzing the process. They're putting the public between a rock and a hard place. It's just pandering to Duke and the DOE. If it was serving the public, this wouldn't be happening."

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