What Exactly is a Uranium De-Conversion Plant, Anyway?

Posted by 505stop On August - 5 - 2010

In light of the recent announcement by International Isotopes Inc. that it has received the go-ahead to build a commercial depleted uranium de-conversion and fluorine extraction processing facility near Hobbs, we contacted International Isotopes Inc. to find out what exactly this plant will do. Frankly, it looked a little alarming when we first read the press release. Any type of new plant with the word "uranium" in the title could easily turn out to be bad news for New Mexico.

It turns out that this uranium de-conversion and fluorine extraction processing plant is only going to turn the: "DUF6 byproduct from uranium enrichment operations into depleted uranium tetrafluoride (DUF_4)." What this means is that it will basically be only using "spent" uranium in its operations and converting it into useful chemicals that will be used for many applications, including solar cells.

This plant will be the first commercial plant of its kind in the United States. Another first for New Mexico – hopefully a good one!

We posted an article from the Hobbs News-Sun a few weeks ago about the public meeting that took place on July 29, 2010.

The INIS press release states that, "Various members of the public and State, and local government officials spoke during the meeting and expressed their unanimous support and confidence in International Isotopes' ability to complete the project and operate the facility in a safe and environmentally responsible manner."

So it sounds like there was complete support of the new project. If you live in Hobbs and have any additional comments or if you attended the meeting, please drop us a line.

Environmental Impact

We reached out to Jim Drewitz, who takes care of media relations for International Isotopes Inc., and asked about the human health and environmental safeguards that the company will take to make sure none of that spent uranium ends up turning us all into Zombies.

Drewitz explained, "The plant will incorporate very strict standards for protection of the public and the environment. Our plant will handle depleted uranium only in a confined, contained, and carefully monitored process. There will be no change to the current environmental conditions on the site as a result of our operations and specific conditions of our operating license with the Nuclear Regulatory Commission will require that we continually monitor and prove that. While it is the possession of uranium in our plant that requires licensing the plant is really much more of a chemical processing facility than a radiological one. The fluoride products we manufacture are important in the manufacture of a host of products – including thin film photovoltaic materials for solar applications. The fluoride products must also be carefully controlled, monitored, and contained during all of our processes and we will have the systems in place to safely do that as well."

The company is anticipating that the surrounding environment of New Mexico will not be polluted in any way by the plant. Of course this remains to be seen, but the company is taking a number of steps to ensure that none of this DUF6 (depleted uranium hexafluoride) leaches out into the ground and makes Hobbs glow at night. One of the most basic environmental safeguards is the simple fact that all of the useful materials produced at the plant will be sold on the commercial market and not stored at the facility. If you think back to past environmental disasters, a great number could have been averted simply by implementing responsible storage and disposal procedures. Any remaining radioactive materials will be disposed of as low-level radioactive waste, and also will not be kept at the facility.

This plant will also have a positive impact in the wider environmental picture in the United States, especially in regards to the storage and treatment of DUF6 across the country. Apparently (and this is probably news to many of you as well), there is a lot of this DUF6 stuff in different places all over the country. It is a byproduct of uranium conversion undertaken by the Department of Energy and other commercial operators, and there is a lot of it. There are few options right now for converting this toxic stuff, and it has piled up in various facilities throughout the U.S. Drewitz mentioned that the Dept. of Energy is building some of these plants of their own, but it will take them ages to convert all the DUF6 owned by the DOE, and that has to be done before they can deal with the stuff that was commercially created. In other words, the INIS uranium de-conversion and FEP facility will provide a near-term solution for disposal of commercially-produced DUF6.

An INIS publication stated recently: "The INIS process will safely de-convert depleted uranium while significantly reducing waste byproducts and producing economically and environmentally important high purity fluoride and fluorine gas products."

Energy Use

In addition, it appears that this plant will be much more energy efficient than other methods of producing fluoride gas.

Steve T. Laflin, INIS CEO said in the press release, "We have submitted our project under the energy savings in manufacturing solicitation of the loan guarantee program on the basis of the energy savings of our fluorine extraction process compared to conventional fluoride gas production methods. Using FEP, we believe we can produce these fluoride products using just a fraction of the energy typically required to produce fluoride products by conventional means, thereby saving millions of pounds of CO_2 emissions each year."

Economic Benefits

The construction of the facility is slated to start in late 2011, following plant design, licensing, environmental permitting, and all that fun stuff. The company estimates that approx. 350 workers will be hired to construct the plant, including cement masons, welders, electricians, metalworkers among others. INIS has stated that they intend to hire local companies and workers to participate in facility construction.

Once construction is completed, INIS predicts hiring a full time staff of approximately 150 employees to operate the plant. INIS hopes to hire employees from the local workforce to the maximum extent possible, and provide most of the necessary training.

Jim Drewitz further stated, "The plant will employ about 120 to 140 in the initial phase. This will roughly be 60% technicians, 20% professional engineers, and 20% labor and administrative. We will try to hire as much from the local area as possible and plan on working closely with the New Mexico Junior College and University of the SW (both in Hobbs) to train for technical programs and offer educational career advancement opportunities for our employees. (The Company is a strong advocate of employee education and career development). The plant will inject $10 – $20 million a year into the local economy as a result of salaries, benefits, and procurement."

It might be too early to tell, but it appears to be a win-win situation for us all. What do you think? Are there any potential negatives that have not been discussed?