

Nucleonics Week

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Nuclear certificate holders increase as industry anticipates revival

The number of companies with American Society of Mechanical Engineers certificates to provide components and services for nuclear reactors in the US jumped 34% between January 2007 and January 2010, reflecting new interest in nuclear power, according to data compiled by the Nuclear Energy Institute.

The NEI tallies ASME certificates and uses the result "as an indicator of

whether or not people are re-entering the sector," said Carol Berrigan, NEI's senior director for industry infrastructure and supply chain. The number of ASME nuclear certificates had fallen from nearly 600 in 1980 to fewer than 200 in 2007, reflecting the hiatus on reactor construction (NW, 24 Jan. '08, 3). The recent uptick in certificate holders, Berrigan said in an interview earlier this month, marks "the beginning of

reinvestment and people responding to the market opportunities that they see."

ASME has two types of nuclear certificates, one for materials and the other for nuclear components. As of March this year, 247 companies held 645 nuclear certificates, 52% of which were issued to companies outside of North America, according to Wilfred LaRochelle, vice chairman of ASME's

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UK energy secretary: Industry achieves consensus on carbon price

UK Energy Secretary Chris Huhne said September 15 that the three utility consortia planning to build new reactors in the UK have recently "reached convergence" on the idea that a carbon floor price will be enough to enable new nuclear power in the UK to go ahead.

"Some industry people had been saying that the carbon floor price would be enough" to enable new

nuclear construction to go ahead, Huhne said, "while others were preferring other options," he told the House of Commons select committee on energy and climate change.

"Recently, industry has converged on the view that the carbon price floor would be enough," he said. "That is very interesting," he said.

EDF Energy has long supported a mechanism that would supplement the

European Union Emissions Trading Scheme and have the effect of putting a floor on the carbon price in the UK.

But EDF, through its purchase of British Energy in 2009, has a large existing nuclear footprint in the UK that would also benefit from the floor price, whereas some of the other utilities planning on building new reactors are more invested in the UK in coal and

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German reactor lifetime extension pact detailed

German utilities could reduce contributions to a renewable energy fund if a nuclear fuel tax is extended past 2016, under terms of their reactor lifetime extension agreement with the government.

The agreement was reached September 5 and the government released the detailed version September 10, after it was leaked to German media. It provides that if the fuel tax, which is scheduled to run from 2011 to 2016, is extended by a new gov-

ernment, the utilities would be able to reduce required payments into a planned fund for developing renewable energy sources. The agreement released by the government does not say by how much the payments could be cut.

The utilities could also reduce contributions if required safety upgrades at their reactors exceed Eur500 million (US\$642.4 million currently) per unit, although by how much is not specified.

The fuel tax will be levied at Eur145 per gram of uranium, a level

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the government expects to generate Eur2.3 billion annually. The money will be used to help offset the federal budget deficit.

The total fuel tax payments would be capped at that level, even if utilities use more nuclear fuel.

Under the agreement, nuclear utilities will also have to pay Eur300 million in 2011 and in 2012, and Eur200 million per year in 2013-2016, into a fund for developing renewable energy. Beginning in 2017, utilities would pay Eur9 per megawatt-hour into the renewables fund. Payment levels would be adjusted after 2017 based on an index linked to the price of the two-year German baseload electricity future traded on the European Energy Exchange.

The base price for the index is Eur53.83/MWh, the closing price on September 3. The agreement says that if the future price increases by more than Eur10.17/MWh and remains at that level or higher for 12 months, utilities might have to pay more into the fund. If prices fall below Eur43/MWh, utilities could pay less.

The agreement is scheduled to be reviewed by the government and the utilities in 2019. It requires changes to Germany's nuclear law in order to take effect. The government plans to make the agreement part of the new energy strategy that it is scheduled to formally approve September 28. It will then go the Bundestag, the lower chamber of parliament, for debate and a vote.

Chancellor Angela Merkel hopes to avoid having to bring the nuclear portion of the strategy and the lifetime extension agreement to the Bundesrat, the upper chamber,

where her Christian Democrat-Free Democrat coalition government no longer holds a majority.

In an interview with German broadcaster ARD September 13, Economy Minister Rainer Bruederle said he is certain Bundesrat approval is not needed. "The interior and justice ministries spent months very carefully preparing the legal framework for an extension," he said. "I'm fully convinced that it is legally watertight."

Other legal experts, however, have said Bundesrat approval is needed. And five Social Democratic state premiers have written to Merkel saying they will bring suit in Federal Constitutional Court if she does not go to the Bundesrat. A Social Democrat-Green government negotiated the agreement with utilities to phase out nuclear power.

Anti-nuclear groups plan to protest the new agreement September 18 in Berlin, with organizers telling police they expect 30,000 people to participate.

In neighboring Austria, Rudi Ansober, environment minister of the state of Upper Austria, told Austrian media that he considers Germany's Isar-1 unsafe and that its lifetime should not be extended by the equivalent of eight years past 2022, as the German government has agreed. The unit is 100 kilometers (about 62 miles) from the Austrian border.

Ansober said the lifetime extension agreement was a "decision for the profit interests of the atomic energy lobby and against safety concerns." He added that the Austrian federal government plans to send a letter of protest to Merkel. Austria has no commercial nuclear power and is officially anti-nuclear.—*Ariane Sains, Stockholm*

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EC consultation shows strong support for new waste directive

A public consultation by the European Commission showed overwhelming support for binding legislation at the EU level on managing spent nuclear fuel and radioactive waste, according to results released last week.

Among all respondents to the consultation, which took place between March 31 and May 31, 67.6% said they did not feel that sufficient measures had been taken in their country to ensure the safe management of spent fuel and radioactive waste.

Binding EU legislation was supported by 77.8% of respondents.

Respondents were classified as individuals, organizations/companies or public authorities. There were 428 individual respondents and 82 respondents from the remaining two categories, according to the results summary.

Support for binding legislation was highest among respondents from organizations/companies at 82.1%; while support for binding legislation was 77.6% among individuals and 66.7% among public authorities.

The majority of individual respondents had no direct professional ties to radioactive waste issues, according to the results summary.

Thirty-five nongovernmental organizations responded, as did 15 public authorities, eight waste management organizations, 11 producers of radioactive waste and three technical service organizations, the summary said.

Nearly one-third of all respondents came from Italy, which shut all its reactors and banned new ones after the 1986 Chernobyl accident but is considering building new units, while Germany represented nearly 20%. The next-largest country represented by respondents was France with 7.7%, the results summary said.

The survey also queried support for various options for ensuring compliance with a new directive on waste management, ranging from periodic peer reviews to submitting national reports to the IAEA, as part of reports already filed to that body, and separate reporting to the EC.

While 32% of all respondents supported requiring national governments to report separately on their progress in implementing the directive, support for this option was lowest among public authorities, at 26.7%. Individual respondents supported separate reporting to the EC at 31.3%, while 37.3% of organizations/companies supported it.

The EC is expected to finalize a proposed EU directive on nuclear waste within the next few months and submit it to the European Parliament, which could propose amendments. The legislation would be forwarded to the EU Council for adoption, which could occur by year-end, officials have said (NW, 20 May, 8).

Hien Bollens, an assistant to EC nuclear energy director Peter Faross, said September 14 that the nuclear directorate has finalized the impact assessment on the proposed

directive and that the proposed directive was going through inter-service consultation within the commission.

He said he could not provide any details of the new directive, such as whether it contains a requirement for geologic disposal, because the document was still under discussion internally.

The European Nuclear Energy Forum, a body created by the EC to discuss nuclear energy issues among stakeholders, has already endorsed binding EU legislation on nuclear waste. In an April position paper, ENEF said the EU nuclear waste directive "must clearly require deep geological disposal for high-level waste and spent fuel, if regarded as waste."

But the geologic disposal option is not universally supported. Current policy of Scotland's government, which has autonomous decision-making authority in this area from the UK national government, prohibits geologic disposal. Scotland mandates aboveground storage.

On September 15, Greenpeace released a statement saying European leaders have been "misled" about the safety of geologic disposal "by its most critical advisors" at the Joint Research Centre and the EU Implementing Geological Disposal Technology Platform.

The Joint Research Centre is the research arm of the European Commission. The geologic disposal technology platform is one of a number of so-called technology platforms launched by the EC to study and make recommendations on specific energy issues.

The Greenpeace statement announced the release of a Greenpeace-commissioned report by Helen Wallace, director of GeneWatch UK, a not-for-profit group that monitors developments in genetic technologies. "There are blanks in our understanding of deep storage; cracks that are papered over at our peril," Wallace said in the study according to the Greenpeace statement. "We are talking about trying to buy thousands of tonnes of highly radioactive waste for longer than people have existed on earth. It would be a mind-boggling engineering triumph which, if miscalculated, could release highly radioactive waste into our groundwater or seas for centuries, so far below ground that there will be nothing we can do about it," she said.

Wallace has a PhD in environmental modeling from Exeter University. She was a former Greenpeace employee and testified as an expert witness in the 1995 planning inquiry into the former Nuclear Industry Radioactive Waste Executive, or Nirex, proposal to build a rock characterization facility at Sellafield to test the geologic repository concept. In 1997, the application to proceed with site work was rejected by the then-secretary of state for environment John Gummer.

The report is at www.greenpeace.org/eu-unit/press-centre/reports/rock-solid-a-scientific-review.

ENEF also urged the EC to shy away from any further requirements on decommissioning and waste disposal financing in the proposed new directive, other than to make note of the EC's 2006 recommendations on the management of financial resources for the decommissioning of nuclear installations, spent fuel and radioactive waste.

The EC has long been concerned about the availability of funding in member states for decommissioning and waste disposal costs, but its past attempts to regulate financing arrangements were rejected by the European Council.

Details on the consultation and its results are at ec.europa.eu/energy/nuclear/consultations/2010_05_31_fuel_waste_en.htm.—*David Stellfox, Barcelona*

EU nuclear industry prepares for Gen IV industry initiative

Europe's nuclear industry took another step this week toward an initiative aimed at construction and operation of two fourth-generation fast reactors with broad EU participation.

Technological and financial support for a midsize prototype sodium-cooled fast reactor in France, called Astrid, and a lead-cooled fast reactor pilot plant called Myrrha, planned for construction in Belgium, is being discussed at this week's meeting of the Sustainable Nuclear Energy Technology Platform. Snetp is a broad forum of stakeholders seeking to support the development of nuclear fission technology as part of a European sustainable energy mix. Besides the fast reactor initiative, Snetp is focusing on enhancing safety and economy of the current reactor fleet and on other applications of nuclear, notably cogeneration.

The conclusions from the Snetp meeting held early this week will feed into the expected launch of the European Sustainable Nuclear Industrial Initiative, or Esnii, at a conference of the EU's Strategic Energy Technology Plan November 15-16, sponsored by the EU's Belgian presidency.

Esnii will be based on a road map for Generation IV reactors targeting deployment in 2040. Three technologies are under consideration: sodium-cooled fast reactors, or SFRs; gas-cooled fast reactors, GFR; and lead-cooled fast reactors, LFR.

According to Christophe Behar, director of nuclear energy at the French commission for atomic energy and alternative energies, or CEA, and chairman of Snetp this year, the budget needed to deploy the CEA's planned SFR, Astrid, and associated fuel cycle facilities is estimated at around Eur6 billion (in 2009 euros) between 2020 and 2050.

Behar said in an interview September 13 that under current plans, the program would be financed 80% by public funds and 20% by the private sector. Besides the French government and the CEA's industry partners, Astrid could be built with support from EU states and the EU, he said.

Earlier this year, Snetp established two other working groups. The first aims to set up an industrial initiative for Generation II and III reactors and is based on work under the Nulife program of the European Commission's Seventh Framework Program for R&D, or FP7. The second aims to put in place a nuclear cogeneration initiative that would use high-temperature reactors, based on the FP7's Europairs program. Only the "sustainable nuclear energy" initiative, based on liquid-metal-cooled reactors, will be launched this year.

The industrial initiatives are meant to allow co-investment of private and public sources in nuclear fission R&D projects, while making maximum use of the EU framework to make the pooled resources go further.

Snetp envisions supplementing money available under the FP7 (about Eur814 million over five years) with private and public money from EU states. Other sources of financing are also envisioned, including the European Investment Bank, EIB, and Euratom loans.

Behar said the legal structure of the fast reactor initiative is still under discussion.

Snetp was launched on September 21, 2007 at a meeting that drew 360 participants representing government, utilities, industrial energy consumers, finance and scientific circles. It came after the creation of several other such energy technology platforms.

Snetp released a "vision" document in 2008, a strategic research agenda in June 2009, and strategies on education, training and knowledge management and R&D deployment this year.

Snetp's "vision" was based on three "pillars" for the future development of nuclear energy, according to Bernd Guethoff of German nuclear power plant operator E.ON Kernkraft GmbH, vice chairman of Snetp's governing board. The pillars are: maintaining safety and competitiveness for today's reactors; developing Generation IV fast reactors with closed cycles to enhance sustainability; and enlarging the nuclear fission portfolio beyond electricity production to applications like hydrogen, syngas, seawater desalination, and other energy-intensive industry sectors.

Dominique Ochem, Behar's deputy for international strategy, said September 14 that for the CEA, which has been working on Gen IV fast reactor options for several years, "it was very important to reach a consensus [in Europe] on what should be done, and have that accepted by the [European] Commission."

Earlier, the EC had steered clear of a policy on nuclear power's long-term development, in large part because several EU countries had anti-nuclear policies and/or nuclear power phase-out legislation in place. The EC began to warm to nuclear power under the leadership of Jose Manuel Barroso, while still underlining that reliance on nuclear power is a national choice.

"For us, Snetp is extremely important," Behar said. "It's the first time Europe has asked itself questions about nuclear energy policy."

Structure

Snetp has more than 75 member organizations, including 11 European utility companies.

In May, Snetp published a study commissioned from the management consultancy Deloitte to identify the most appropriate financial tools and legal structures for the future consortia that will be responsible for carrying out Esnii's various components.

That study concluded that "additional Euratom financial resources" would need to be provided to Esnii projects,

with the EIB loan instruments being adapted to the nuclear program. It said nuclear issues must be “fully integrated” into the next R&D Framework Program, now under negotiation, and into the next round of EU Cohesion Policy Funding, which provides financial support to the EU’s new states from central and eastern Europe. And it said EU incentive frameworks to encourage low-carbon technologies and reduce energy supply dependency should be designed to take nuclear power into consideration.

The Deloitte consultants further suggested that a “light” joint venture structure be designed for implementation under the Euratom Treaty and/or under nuclear R&D infrastructures. That would provide an option for structuring of large demonstration projects, supplementing the Joint Undertakings that are now possible under Euratom but require full EU Council political support.

A light joint venture structure doesn’t require a high-level political approval process, as Joint Undertakings do. That kind of light joint venture, called a European Research Infrastructure Consortium, or ERIC, exists under the general EC Treaty.

The aim of these measures is in many cases to reduce the cost of the initiatives, either by making more EU funds available — like the Cohesion Funds — or by exempting the projects from taxation.

While the initial SFR and LFR facilities are expected to be built in France and Belgium, a GFR demonstration unit called Allegro and an LFR demo, both between 50 MW (electric) and 100 MWe, should be built in a new EU state like the Czech Republic, thereby providing up to 35% of the funds, according to the Deloitte study.

Ochem said three new EU states — the Czech and Slovak republics and Hungary — have banded together to propose joint sponsorship of the GFR demo plant. He said the CEA, which earlier did significant work on GFR technology before refocusing on sodium-cooled reactors a couple of years ago, was ready to support this initiative and provide results of its R&D.

The smaller (100 MW thermal) LFR technology pilot plant envisioned in the Esnii is based on the Myrrha project put forward by Belgium’s SCK-CEN nuclear research center, for which the former Belgian government confirmed funding earlier this year. Deloitte said it would cost about Eur853 million, 31% of which it assumed to be provided by national public research investors, 30% by private investors, 24% by EIB or Euratom loans plus tax exemptions, 10% by EU incentives and grants, and the rest by the host country. Myrrha was originally presented as a pilot unit to transmute minor actinides, which are actinides other than uranium and plutonium.

But the Deloitte study emphasizes the technology’s potential for safety and economic competitiveness compared with the SFR.

Astrid funded

Meanwhile, the CEA continues on the road toward deployment of Astrid, and says that engineering work can continue pending establishment of an international support

framework for construction and operation of the reactor and fuel cycle facilities.

The French government this month confirmed its contribution of Eur651.6 million over 2010-2017 to support detailed design of the reactor and two fuel facilities, via a CEA-State convention, or formal agreement, published September 11. The money will come from a bond issue the government has announced to promote certain sectors of research and innovation.

The CEA is finalizing conventions covering Astrid design work with Areva, EDF and GDF Suez, Behar said. The three industry firms have about 60 people working on the Astrid project at present, he said. EDF is also participating in the Astrid R&D. As cooperation gets closer to the industrial stage, agreements must be worked out to govern intellectual property, he noted.

Behar said the CEA is in the process of “consolidating participation of the current members” in the Astrid consortium, but emphasized that future participation remains open to all.

The current consortium, with the CEA as project owner and the three industry firms doing engineering, can carry the project to 2017, but after that “we need to organize a final [partnership] to build” the reactors and associated fuel cycle facilities, Ochem said.

That can include Europe, but needn’t be limited to Europe, both CEA officials said.

Behar said he expects that a tripartite agreement with Japanese and US partners for cooperation in R&D in sodium-cooled fast reactors will be signed by year-end, and it will propose “specific items” for joint work.

The Deloitte study proposes that financing construction of a 600-MW SFR, which it said would cost Eur4.286 billion (without the fuel facilities), be structured with Eur1.045 billion in EIB or Euratom loans, Eur1.1 billion in EU incentives and grants, Eur625 million from “national public research investors,” Eur214 million in investment from the host country, Eur639 from private investors, and Eur632 in tax exemptions that would result from use of an ERIC or Joint Undertaking scheme.

If there were only French companies, the operating organization would be a French limited company; if there are others, it would be a European company, it said.

Deloitte noted, however, that “the level of EU incentives and grants” in this plan “is very high (25% of the total cost),” and that the EU’s general support for the nuclear sector “may need to improve in order to obtain this level of financing.”—*Ann MacLachlan, Paris*

Nuclear costs may continue to rise, nuclear critic says

Costs to build nuclear power plants haven’t fallen in France and are unlikely to fall in the US, Mark Cooper, a fellow at the Institute for Energy and the Environment

at Vermont Law School and frequent nuclear critic, said September 9.

Continued investments in nuclear power will “crowd out” gains in renewables and energy efficiency, he said.

A cost comparison between the US and France, the countries with the largest electricity production from nuclear power, shows costs have been rising for deployment of the technology in both countries, Cooper said. France is often held out as an example of how nuclear energy can be deployed successfully, he said. But nuclear reactors are not cheaper in France and the cost did not decline over time even as opposition to nuclear energy declined, government support increased, and multiple units were built, Cooper said. Both the US and France have experienced consistent cost escalation, Cooper said.

The industry has said standardization of designs and increased economies of scale would reduce costs, but there is no evidence that future costs will decline, Cooper said. Recent cost overruns at reactors in Europe could extend to those built in the US, he said. Cooper released his report and held a telephone news conference on it September 9.

But Nuclear Energy Institute spokesman Steve Kerekes said in a September 14 interview, “It’s an anti-nuclear report written by an anti-nuclear activist.” The study does not take into account changes to the US licensing process that should prevent long delays experienced by the industry in the 1980s, he said.

Some of the recent cost increases in nuclear construction cited by Cooper reflect “first-of-a-kind” issues at new nuclear power plants in France and Finland, Kerekes said.

Cost to build pressurized water reactors in the US rose from about \$1,200 per kilowatt in the 1970s to \$3,100/kW in the 1980s, using 2008 dollars, Cooper’s study said. In France, costs for PWRs rose from just under \$1,000/kW in the early 1970s to \$3,000/kW in the 1990s, it said.

Cooper said he studied PWRs because it allowed him to compare more accurately to costs of the French fleet and because most companies that have filed cost estimates for new US units are planning to build PWRs. The costs cited are “overnight” estimates that exclude the costs of financing during construction.

Costs were usually underestimated, often because projects took substantially longer to complete than expected, Cooper said, and the trend may continue.

States without plans to build nuclear plants had higher production from renewable sources, spent more on efficiency and proposed higher renewable energy standards than those with nuclear plant plans, he said. In France, adoption of renewable energy and efficiency trail neighboring countries, he said.

The US has greater potential to develop renewable energy resources like wind and solar, Cooper said.

But NEI’s Kerekes said those findings don’t take into consideration the relative renewable energy resources of states that have made nuclear power plans. States with fewer options to build renewable energy may be opting for nuclear as the best alternative, he said.

Rod Adams, a pro-nuclear blogger, wrote in a September 11 post that the Cooper study ignores the fact that France exports billions of dollars worth of electricity annually and that it is an abundance of relatively low-cost electricity that has slowed efficiency gains. Adams said in his blog last week that he has accepted a position with Generation mPower, a joint venture of Bechtel Power and Babcock & Wilcox Nuclear Energy that is seeking to design, license and sell B&W’s 125-MW small modular nuclear reactors.

The Cooper report points out that second and third units on a site were cheaper than the first unit, and that some contractors were able to limit cost increases better than others, Adams wrote. This suggests cost savings can be obtained, he said.—*William Freebairn, Washington*

NEA: Prices for Mo-99 irradiation must rise to sustain supply chain

Remuneration for reactor irradiation services and processing services must be based on the full costs of production if the supply chain for medical isotopes is to be sustainable, the OECD Nuclear Energy Agency concluded in a study released September 15.

The agency said governments must decide whether and how they want to continue subsidizing production of molybdenum-99 while transitioning to arrangements that can better match supply and demand over the longer term. One solution could be an international fund, into which consuming nations would pay proportional to their consumption, that would support Mo-99 production from existing facilities and would provide for reserve capacity that doesn’t exist today. Another option, the NEA study said, would be to let commercial Mo-99 prices rise substantially, which would also likely have the effect of encouraging alternative medical imaging techniques. Mo-99 is the precursor for producing technetium-99, the most widely used medical isotope and the basis for imaging techniques that are increasingly in use worldwide.

The study was researched and written by the NEA Secretariat at the request of the agency’s High-Level Group on the Security of Supply of Medical Radioisotopes. That group was set up in April 2009 at the request of NEA members to address growing concerns over the shortage of medical radioisotopes. The effort was spurred by forced outages at several of the research and test reactors on which the world depends for irradiation of Mo-99 targets to produce technetium-99, the most widely used isotope in medicine.

Historically, five reactors, all of them over 43 years old and some over 50, have produced 90%-95% of global Mo-99 supply. All major producers of Mo-99 use multipurpose research reactors for target irradiation that were originally constructed and operated with 100% government funding for research and materials testing purposes, the report said. Mo-99 production was seen as a byproduct that could support research, it said.

Reactor operators originally only sought to cover short-run marginal costs of Mo-99 production itself, it said.

Although the importance of Mo-99 production has increased to the point where most of the major research and test reactor operators told the NEA it is now a significant factor behind reactor operating decisions, there has been no change to the pricing structure, the report said.

The challenges to supply are made more acute by the longer and more frequent shutdowns of the current fleet of aging reactors, the NEA said.

Recent examples are the long shutdowns, for technical reasons, of the two major producers: the NRU reactor in Canada and the High-Flux Reactor at Petten, in the Netherlands. Both are now operating, but the outages led to supply shortages in 2009 and 2010, sparking international concern.

The NEA said that conversion to low-enriched uranium targets might also bring additional conversion and operating costs.

A further complication to the present situation, it said, is the commercialization of radioisotope production, separate from reactor operation itself. Reactor operators told the NEA that governments created commercial contracts with processors in the 1980s and 1990s “based on historical perceptions of costs and pricing structures and their interest in developing the nuclear medicine sector.” That resulted in “long-term contracts with favorable terms for the commercial processing firm,” the NEA said.

Established processors also adopted “aggressive pricing strategies and exclusivity contracts” that effectively kept new entrants out of the market, it reported. Not only did this lead to low reserve processing capacity, but it “maintain the buyer market power and perpetuated the pricing structure that was insufficient to cover full operational and replacement costs of reactors,” the NEA said.

It said that although “the symptom has been addressed” because the reactors with problems are now operating again, “the underlying cause” of inadequate market model has not.

The analysis found that the marginal revenue from production of Mo-99 was lower than the marginal costs, with reactors facing a loss on average of Eur26 on each Mo-99 six-day curie end-of-processing stage produced. The six-day curie EOP is a standard measure of Mo99 production.

Changing to LEU targets won't resolve the problem, since LEU production costs are even higher than with traditional high-enriched uranium targets, the NEA said.

The agency found that “Prices must increase, but the impact on end users [of the needed increase] is small.” Irradiation service prices should rise up to about ninefold — to a maximum of Eur400 or US\$555 per six-day curie EOP, it said.

But “even at the most extreme price increase at the reactor level, the value of irradiation would only be 0.97% of the final reimbursement rate for the [imaging] procedure,” the NEA said. That represents a substantial increase over the current percentage of 0.11% but is “not very significant” compared to the overall reimbursement rate of the medical

procedure, it said.

If absolute cost increases were passed through to end users, the cost of radiopharmacy involved in medical imaging procedures would increase from 4.42% of reimbursement rates to 5.69%, it said.

The NEA said that since the supply crises of the past couple years, things have begun to change, with prices for irradiation services rising and some of the barriers to new market entrants being removed.

But it said governments should use the opportunity to define how they want to define “the social contract” under which they reimburse nuclear medicine procedures — that is, whether they want to continue subsidies or to put the industry on a more commercial basis, and whether they are willing to fund reserve irradiation capacity.

It said the NEA will follow up the economic study with a series of background papers on different market models and approaches to ensure sufficient capacity, including reserve capacity.

The report is at www.nea.fr.—*Ann MacLachlan, Paris*

ASME ... *from page 1*

Committee on Nuclear Certification. He presented the data at an NRC workshop in June on new reactor construction.

There are six types of nuclear component certification stamps that companies can physically engrave on their products. An “NA” stamp marks companies’ ability for field installation and shop assembly, while an “NPT” stamp applies to fabrication, an “NS” stamp is for nuclear supports, and an “NV” stamp covers pressure relief valves. There also is an “N3” stamp for containment of spent fuel and radioactive waste. The most important ASME nuclear certificate is called the “N-stamp,” which attests to companies’ ability to manufacture nuclear-grade equipment — mostly pressure-retaining components — according to the ASME Boiler and Pressure Vessel Code. The certificates are valid for three years but can be renewed.

The NRC requires N-stamped components for installations at nuclear power plants in the US. Also, “a variety of other countries” require N-Stamp certification “either by a body within the jurisdiction, such as the regulator, or by contractual agreement,” Joe Wendler, ASME engineer of codes and standards, said in a September 7 e-mail.

The ASME web site lists 154 N-Stamp holders. That’s a 40% increase from May 2008, said Wendler. Burns and Roe, a New Jersey-based engineering, procurement, construction and maintenance company, obtained an N-stamp in June. The company had an N-Stamp in the 1970s, according to Joseph Scerbo, its business development director for commercial nuclear. “We let it lapse” in 1980s, he said earlier this month, “because of the way the nuclear industry was.” B&R applied for an N-stamp again in spring 2009 “in anticipation of a nuclear renaissance,” said Scerbo.

The year-long accreditation process, during which ASME

auditors inspected “every aspect” of the company’s operation, cost between \$1 million and \$1.5 million, according to Surendra Tiwari, B&R’s director of quality assurance.

As part of the certification process, a company must contract an authorized inspection agency, or AIA, such as a federal or state government agency or an ASME-accredited company, to prepare for an ASME nuclear survey. The applicant then schedules the survey with the ASME, a process that can take up to eight months, according to LaRochelle’s presentation. The survey itself takes three to five days, after which the survey team will make recommendations to ASME Committee on Nuclear Certification on whether a certificate should be issued right away, issued after a satisfactory follow-up report from the AIA, or whether another survey should be done.

B&R’s Tiwari described the accreditation process as a companywide major undertaking but said it can produce commercial rewards. In a September 2 interview, he called the N-Stamp “a great differentiator” that enhances a company’s stature in the eyes of existing and potential clients. Some other manufacturers “that are now getting back into the commercial nuclear marketplace” have contracted B&R to provide advisory services for their N-Stamp application programs, he said.—*Yanmei Xie, Washington*

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gas.

RWE officials have expressed a desire to have nuclear power on a level playing field with renewables by including nuclear power in the renewables obligation certificate program, which supports high-capital-cost technologies like wind power (NW, 8 July, 6).

Alan Raymant, the chief executive of E.ON-RWE joint venture Horizon Nuclear Power, which plans to build up to 6,000 MW of new nuclear capacity in the UK, has also expressed doubts about the sufficiency of a carbon floor price (NW, 4 March, 1).

Huhne said that discussions about the carbon floor price are continuing.

Huhne told the committee that he is committed to delivering on the coalition government agreement in support of

new nuclear power plants.

Huhne, who describes himself as a former nuclear skeptic, heads the Department of Energy and Climate Change under the Conservative-Liberal Democrat government. He told the committee that the coalition agreement that the Liberal Democrats signed on to was very clear on new nuclear units. “A deal is a deal and my job is to deliver on that deal,” Huhne said. “I intend to do that.”

He would not answer a question from a committee member about whether he would vote on new nuclear policies when they come up in Parliament. He noted that the coalition agreement prohibits the Liberal Democrats, traditionally anti-nuclear, from voting for or against nuclear measures in Parliament, but the agreement allows for a vote of abstention. But he said he would have to “discuss that with my [Liberal Democrat] parliamentary colleagues.”

Responding to a question from a committee member on whether his department had a policy explicitly supporting extending the lives of existing nuclear power plants, Huhne replied that it did not. “That is a decision that the operators have to take in the first instance,” Huhne said. “The reality is that the operators already have an enormous [economic] incentive to keep the plants running” and there are existing procedures in place to review any such plans, he said.

Both the former Labour Party government and the current coalition government have said they will provide no public subsidy to new nuclear power plants.

Asked by committee members to define what the government means by a public subsidy, Huhne replied that answering the question “could keep a college full of economics PhD students going for several years.”

But Huhne said that “anything that is specific to the industry” would constitute a subsidy, while “anything general to low-carbon [industries] would not be a subsidy” to new nuclear power.

Aside from the carbon price, Huhne said that “anything else” the government does by way of policy framework of a general nature to support low-carbon generation “will also be available to new nuclear.”

Huhne also said he was confident that the Nuclear Installations Inspectorate’s reviews of the Areva EPR and Westinghouse AP1000 reactor designs “will be complete” on time and that “we’re on course for 2018” to have a new nuclear reactor operating.—*David Stellfox, Barcelona*