

15. NUCLEAR GENERATION ADVANTAGES REMAIN

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Nuclear Industry: Advanced Technology

Nuclear power plants worldwide have been silently functioning successfully, generating electricity 24 hours a day practically year round, and contributing to the operation of our industries and to the welfare of humanity. This high level of performance, achieved throughout the years, is due to various factors intrinsic to this technology:

- Improvement of the rugged design of the plants over the years.
- Increased experience and knowledge of the technicians who manage and operate the plants.
- An ongoing exchange of information amongst plants all over the world.
- Continuous monitoring of the plants by regulatory bodies as well as by national and international experts.
- Technological development, safety improvements and risk reduction
- Greater reliability than that offered by other types of electrical generation (guaranteed supply)
- Cost optimization, competitiveness
- External factors:
 - Independence of fossil fuels
 - No emission of greenhouse gases
 - Important socio-economic impact of the nuclear industry in the current economic situation.

Because of this, nuclear energy has become a key component in the generation mix of developed countries.

Reasons for Nuclear Electrical Generation before Fukushima

The image of nuclear energy in most countries has improved substantially in recent years due to:

- Specific factors associated with nuclear technology:

World public opinion demands new answers after Fukushima. The nuclear industry, scientists, energy experts, institutions, etc., should listen and contribute to full capacity in order to respond to the new situation.

What Happened in Fukushima?

The accident which took place at Fukushima was due to a combination of extreme natural phenomena. The forces of nature were so strong that they have shaken one of the most advanced countries in the planet. The intensity of the natural phenomena exceeded the values for which the plant was designed. Because of this, the multiple alternatives which the plant had to comply with the established security safeguards were insufficient. The required external support was also affected by the same natural phenomena.

Plant technicians worked courageously and professionally, under extreme conditions and during several days, in order to maintain the safety of their reactors, thus alleviating the serious situation faced by them. They used all the knowledge, experience and means available. I know for a fact, that while they were doing this, they were conscious and suffering due to the pain of the nearby population and their families affected by the earthquake.

Emergency plans which had been prepared for these situations in order to evacuate the nearby population, functioned as they were supposed to. The exemplary and responsible attitude of the Japanese people still impresses us. It is now one of the priorities to do everything possible in order for those affected to gradually return to their normal lifestyle.

And Now, What?

There are numerous questions for the international nuclear community: What do we do now? Can we keep nuclear power plants all over the world functioning? Can the existing regulation be trusted? Should people in other countries also worry? Answers must be clear, precise and understood by all citizens. All of those involved, whether technicians, businesses, regulatory bodies, public and private institutions or the media, must provide information, each in their own field.

Although the situation took place in a very specific area of the planet, its impact has been global and reactions have reached all countries, no matter how far they were from the affected zone. It must be stated, that political opinion toward this type of energy has also influenced decisions made by each country.

In Europe, extreme positions have been adopted,

such as Germany's decision to return to the situation which existed before the Angela Merkel coalition government agreements. More balanced positions have been taken by the majority of European countries. Plant design margins will be analyzed in order to continue operating, taking into consideration the extreme natural phenomena which occurred in Japan. In Spain, according to international practices, plants have verified their readiness to cope with extreme conditions which could occur in each of their specific locations. Presently, Spanish power plants are conducting a thorough review of its margins to continue operating under conditions way beyond their design basis.

In short, the industry has responded and confirmed the validity of the safety measures under the established hypothesis. From this review of current margins, new improvements will be reached for enhanced security under unforeseen scenarios. The need for regulation will once more be increased in order to take these new situations into account, trying to achieve consistency throughout countries. Steps are being taken in order to maintain the trust that society has in nuclear technology.

Advantages of the Nuclear Generation are Maintained

Reasons for maintaining nuclear electric generation have not changed. Safety will be reinforced with new modifications. It will be strictly regulated and standardized amongst countries. Reliability, environmental friendliness, supply guarantee, fossil fuel independence, competitiveness, economic growth and technological development are still very solid reasons.

Precise, Clear Communication; Key in this New Stage

Accidents are recorded by society in many areas (roads, aviation, etc.) but the perception of risk does not exist. Fewer accidents are recorded in the nuclear field yet the perception of risk is higher. Nuclear power plants have substantially increased the safety of its facilities in recent years. Technicians who operate these plants have achieved a much higher level of knowledge. Sharing of technological information within the nuclear industry is much greater than in any other field. It is time to explain to people around the world how the nuclear industry works and to regain the confidence and support that this technology deserves.

The pending issue is now to communicate and clearly explain this new situation as well as to remind society of the ongoing commitment to safety that all of us who work in this industry have. We must be capable of answering any and all questions asked by the citizens (which will be most probably similar in all continents of our globalized world) so that they can partake in the advances and advantages. Participation of national organisms and institutions as well as international experts will be of great help in this task.

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