

DAWN

Caution required

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THE Sindh High Court has ordered the Pakistan Atomic Energy Commission (PAEC) to submit a new Environmental Impact Assessment (EIA) report for the two large nuclear reactors planned for Karachi. The court order, issued in December 2014 after a public interest petition by concerned citizens, also requires the Sindh Environmental Protection Agency (Sepa) to abide by the Sindh Environmental Protection Act and invite public comments on this EIA before approving the project.

Given the potentially devastating consequences of a nuclear accident for Karachi's 20 million citizens, the EIA for the proposed nuclear reactors should be as detailed and complete as possible, and meet international best practice.

It is to Sepa's credit that in considering the previous EIA for the planned Karachi reactors, it had required the project to follow "All regulations of United States Nuclear Regulatory Commission [USNRC], International Atomic Energy Agency [IAEA] and International Commission on Radiological Protection [ICRP] ... in design and operation phase". This principle should also be applied to the preparation, content, review, approval and monitoring of the new court-ordered EIA.

The USNRC has detailed guidelines for preparing and reviewing a nuclear power plant EIA. These require analysis of possible radiation releases and effects from severe nuclear accidents to a distance of 80 kilometres from the reactor site, and the possible socio-economic impacts of such accidents. After the March 2011 reactor accidents at Fukushima, Japan, areas farther than 30kms from the site were affected by the released radioactivity, people were evacuated from that area, and four years later access remains limited.

Applied to Karachi, this would amount to evacuating people living as far in the east and northeast as Korangi Creek, Mohammad Ali Society, Gulshan-i-Iqbal, Federal B Area, North Nazimabad and Orangi Town. The EIA for the Karachi reactors must include the long-term socio-economic impact of sealing off for several years this vast area, which includes the port, SITE, and major business centres.

Reviewing the EIA of Karachi's nuclear project is a specialised task.

As for the IAEA, it offers guidance on the matter in a 2014 report *Managing EIA for Construction and Operation in New Nuclear Power Programmes*. As listed by the IAEA, such an EIA should include the impact on the environment due to design base accidents, beyond design base accidents and severe accidents at the nuclear power plant, including "the area of impact and measures to address these impacts in case of accidents" as well as other specific impacts on the environment and population from the nuclear power plant. More significantly, it recommends that the methodologies used to estimate such impacts be specifically mentioned.

The IAEA provides examples of impact models for use in nuclear EIA reports and notes that "it is the responsibility of the EIA team to choose the model and calculation approach, provided that the team has satisfied the competent authority as to the model's suitability and accuracy". These models are

required for instance “to estimate the release of radionuclides to the environment” and “atmospheric dispersion and dose modelling[for] calculation of the dispersion of various radionuclides released in the atmosphere and the estimation of doses received by people and the environment”.

The PAEC has hired Environment Management Consultants (EMC), a private company, to prepare the EIA for the planned Karachi reactors. EMC is not known to be a specialist in preparing a nuclear EIA. This is one more reason for Karachi’s citizens to be watchful about this project.

Sepa is required to review and approve the EIA of the Karachi nuclear reactors before the project can proceed. But review and evaluation of the EIA of the Karachi nuclear power plants is a very specialised task, for which Sepa may not have in-house capacity (especially for validation of the computer models and results), nor have access to independent local experts able to do so. Sepa can, however, seek international help in reviewing this EIA.

As a member of the IAEA, Pakistan is eligible for assistance from the IAEA Site & External Events Design Review Service. This service “provides member states with an independent review of the adherence to the IAEA environmental assessment requirement”. These IAEA activities are supported by leading nuclear energy agencies from around the world, and Pakistan has received IAEA help before with its nuclear reactors.

In the public interest, Sepa should ask for an IAEA review of the EIA for the Karachi reactors and include its results as part of its decision-making process. This IAEA review should also be made public to assist the legally required process of eliciting public comment and holding a public hearing of the Karachi reactors’ EIA. The people of Karachi should know the risks they are being asked to take with these nuclear reactors.

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Published in Dawn March 10th , 2015

Source: [Dawn](#)