

Koeberg Public Safety Information Forum

Date: 14 March 2013

Venue: Nuclear Auditorium – Bulk Stores Koeberg Nuclear Power Station

Chairperson: Vacant

Deputy Chairperson: Ms Smokie La Grange

ATTENDEES	REPRESENTATIVE ORGANISATION
Mr D La Grange	Resident
Mr M Haynes	Resident
Ms J Haynes	Resident
Mr E Hediger	Resident
K Schade	Resident
Mr R Mayhew	Resident
Ms S Mayhew	Resident
Mr I Iosipakis	Resident
Ms C Maigrot	Visitor
Mr H Maigrot	Visitor
Mr K Goebel	Melkbosstrand Private School
Mr L Ngembe	Private
OFFICIALS	DESIGNATION/ORGANISATION
MS D Joshua	Senior Advisor Stakeholder Management – Eskom Koeberg
Mr L Phidza	Stakeholder Management Manager – Eskom Koeberg
Mr K Engel	Plant Manager – Eskom Koeberg
Mr S Pienaar	Communication Officer – Eskom Koeberg
Mr D Nicholls	General Manager – Nuclear Engineering
Mr I Trollope	Emergency Management – Eskom Koeberg
Mr T Tselane	Senior Manager: Compliance Assurance and Enforcement Division (National Nuclear Regulator)
Mr M Ramerafe	Functional Co-ordinator Emergency Planning and Nuclear Safety (NNR)
Ms K Kline	Emergency Management Officer – Eskom Koeberg
Ms T Maimane	Department of Energy
Mr Arno Schröner	CoCT Traffic Services
Mr F Johannes	CoCT Disaster Risk Management
Mr T Hill	National Nuclear Regulator
Mr G Pillay	CoCT Disaster Management
Dr E Steyn	CoCT

1. Opening and welcome

The Deputy Chair welcomed everyone to the meeting. Mr Lewis Phidza, Koeberg Operating Unit Stakeholder Management Manager, conducted the safety evacuation briefing informing attendees about the safety protocol of the venue.

2. Apologies

The following apologies were tendered.

- Mr and Ms Williamson
- Mr and Ms Mayhew
- Mr John Taylor
- Cnllr Marissa Janse van Vuuren

3. Acceptance of the minutes of the previous meeting

Greg Pillay and Elmien Steyn tendered their apologies for the previous meeting however, their names were not captured under the apologies.

The Minutes was accepted by Mr Iosiphakus and seconded by Mr Maigrot.

4. Matters arising

There were no matters arising from the previous minutes.

5. Koeberg Quarterly Plant Status feedback by Mr Riedewaan Bakardien

5.1. Plant Status feedback

- Unit 1 tripped on 20 Feb 2012. Reason: The motor was faulty which led to a non-essential electrical supply board failure. All safety systems operated effectively and there is no threat to safety.
- During start-up, a manual isolation valve failed. This prevents accurate primary temperature measurements, required when at power, and the plant cannot be run with this fault at power. The repair requires unloading of reactor fuel to allow proper valve repair: The unit should return to service in April 2013.
- Unit 2 is at 100% power and there are no nuclear safety concerns.
- The station is closely monitoring an oil leak on the Generator Excitation Transformer.
- All November 2012 NNR Emergency Planning Exercise findings have been closed.

Siren Testing feedback

- Full volume testing was successfully done on 27 and 28 February, and was completed on 1 March 2013.
- It was more focused and the marketing was more targeted, and there was excellent co-operation by all involved.
- There was extensive advertising: Local press (four local newspaper and local radio stations) calendar, leaflets, billboards, and signposting prior to testing.
- There were exhibitions at complexes and shopping malls (i.e. Bayside Mall, Eden on the Bay and Atlantis Business Complex).

Other insights

- NOSA conducted a safety audit in January 2013 and Koeberg's 15th NOSCAR confirmed high safety standards.
- There is a high level of focus on nuclear and conventional safety. The diesel component outage was completed, and there is a general increase of station observations by management.
- The national grid is still very tight – members of the public are reminded to please use electricity sparingly.
- The Visitors Centre is closed due to operational requirements – the focus is on the safe operation of Unit 1.

Question by Mr Phinda

Information about the siren tests was not made available in communities like Du Noon. In the past it was distributed at the local schools. What are the plans to drop off pamphlets at communities and community schools?

Answer by Mr Phidza

Du Noon is outside the 16km radius. We've learnt in the past that if we hand out siren testing information to residents/communities beyond the 16km radius it causes unnecessary alarm. The focus should not be lost. The key focus is to listen to the siren and respond whether you can hear it or not.

Question by Mr Phinda

Does that mean that in an emergency Du Noon will not be taken care of because they are out of the 16km zone?

Answer by Mr Bakardien

The Emergency Plan does focus broader than the 16km Urgent Protective Zone (PAZ). There's a lot of focus on the Emergency Plan requirements within the 5km zone, then the 10km zone, and then the 16km zone, but we effectively cater all the way out to 64km. we've previously worked with Du Noon in terms of the emergency planning to inform people as to what could happen when we do the emergency planning exercise. We need to be prepared for anything including a plume projector going through Du Noon so we'll be able to get actions going in those communities - in fact in all of the surrounding communities outside the 16km zone.

Answer by Mr Trollope

What's important to understand is that the actual zones - 5km and 16km, weren't guessed. There's a reason why there is the 16km zone. According to our license with the NNR we have a formal emergency planning zone up until 16km - this includes all the sirens, after that we have contingency planning. In terms of the contingency planning, it will involve the use of radios, television, people from the City of Cape Town with loud hailers going out, and traffic police, so they will get the information and be informed as what they need to do in the event of an accident at Koeberg.

Question by Mr Lodewyk

In Germany we have a deadline of 30km radius around a Nuclear power station. In the 30km zone/area, we have to leave within six to eight hours. How will you manage with 150 000 people? Especially with regards to Milnerton and Table View. All these people must leave within six hours. We have a traffic jam in Table View every morning. It will be chaos in an emergency. How will you manage this?

Answer by Mr Bakardien

That's exactly why we have an emergency plan which is designed for the Koeberg type of plant design. Each design is somewhat different. In Germany it may be 30km, in South Africa it may be 16km because of the type of design we have. We've got containment, and a number of other safety features. The Emergency Plan itself is designed so that we have the different zones - 5km, and 16km dependent, and that's based upon the design and the kind of predictions we have, as well as the calculations and the design we have on what an event/accident could look like. We develop our plan based on that. Included in the Emergency Plan is how one deals with the communities and the people in the zones and outside the 16km zone. So there are different options we would have, including sheltering or evacuation and our Emergency Plan is set up to be able to go into any of those options

depending on the type of incident that we project. Any developments within this area are subject to very strict legislation to make sure that it is controlled. So for any new communities/developments there'll be a study to ensure that it still fits into our design so that we will be able to evacuate people within the timeline we set within the Emergency Plan. The way we put together our Emergency Plan is that you would have a contra-flow system going, meaning both lanes of the highway going away from the power station would be open, so it wouldn't be typically the same traffic pattern as normal traffic. The traffic lights would be set up in such a way that you would proceed directly out. There are a number of measures in place. A detailed presentation on the evacuation will be shown by Dr Steyn from the City of Cape Town regarding this.

Question by Mr Meyrick

When they had the meetings about the new power station - Nuclear 1, they said the actual zones were going to be less. It was going to be 800m instead of the 5km and was it 6km or instead of the 16km?

Answer by Mr Nicholls

The likelihood of an event which would require evacuation off site on a newly built power station is exceptionally low. That was a position which was taken in Germany prior to the decision to ban Nuclear entirely; it was a German political decision and not an engineering one. We've got from the Regulator the rigid issue sighting regulations about three years ago which actually specified that if we're going to build a nuclear power station, we must be able to show that the credible act (1 in a million years) must not require any off-site emergency evacuation and they recently issued a position paper which indicates how to work out that numbers so that would be part of the specifications of the new plant. Whatever is required for us to be done to show that the plant can survive more robust containment on the new plant at Koeberg, probably more systems although they would comment we've brought previously Koeberg core damage frequency down by a factor of 10 but we've moved Koeberg's design basis from what we almost called Generation 2 standard with the modification over the last ten years we've brought it down to figure which would be acceptable for a new generation power station.

Question by Mr Meyrick

If that safety factor is so much better, why can't you reduce the zones down here now?

Answer by Mr Nicholls

The Emergency plan costs us money. It requires a degree of intervention in the local area but not massively. The actual Emergency Plan of a New Build plant would not be like Koeberg's. It will be a much more of a contingency-based plan.

Question by Mr Iosiophakus

My question refers to the first paragraph of your presentation: Motor faulty which led to a non-essential electrical supply board failure. How big is a motor? Doesn't it have its own safety system which shuts off itself?

Answer by Mr Bakardien

The contactor usually trips first. The motor, if overloaded, only trips after about 10 seconds. The contactor is meant to trip within milliseconds. It happened at the same time and there was a fault on the breaker itself. The protection on the board also tripped out and that is what took out the board. The board also supplies other equipment. The fact that the board tripped led to other equipment tripping. None of them are related to nuclear safety. However, it will cause a shut down as the board tripped, which caused other equipment to trip. There was no impact on nuclear safety however; there was an impact on productivity.

Question by Mr Taylor

What is the performance of this plant compared internationally, with regards to availability?

Answer by Mr Bakardien

We look at a number of things. The availability depends on the length of your planned outages and then we also look at reliability. We have an indicator for availability, which includes planned outages and an extra bit for when the plant trips out unexpectedly. Up to this point when we had the trip, our unit capability loss factor was sitting at 1.17% which is pretty good, better than compared to nuclear world standards for both units. Availability the last few years has been lower largely due to a number of big modifications done on the plant: In the last outage we installed new low pressure turbines on Unit 2. The benefit for that was an extra 30-35 megawatts produced, however those sorts of interventions does add time to the outage. So that outage for example was close to 80 days. When we don't have that type of things the duration for an outage is between 30 to 40 days. Long term however, we have some work to do to keep it at that high level.

Question by Mr Taylor

Is that linked to requisite skills or not?

Answer by Mr Bakardien

The main issue we've experienced during the last few years has been vendor management. A lot of work has been put into vendor management, quality control etc.

6. Fukushima Plant update - Presentation by Mr Dave Nicholls

Question by Mr Taylor

To what extent did they say these are the safety limits? Did the Japanese not follow the advice of the builders of the plant?

Answer Mr Nicholls

When it was said, "It's supposed to be like that", the Japanese did it exactly like that. They applied US standards to the plant in Japan. They also applied a US earthquake. Cultural problems are the biggest problem in Japan.

Question by Mr Taylor

Did anyone die from the Fukushima disaster?

Answer by Mr Nicholls

There were no deaths as a direct result from the accident. Two people were killed due to drowning. A total of 573 - which is the number of deaths – are attributed to the evacuation after the earthquake and tsunami. There were 45 deaths because of evacuations at the hospital.

Comment by Mr Lodewyk

The reason for Fukushima was not the tsunami but the earthquake. Koeberg is also in a danger area as we have a risk of an earthquake.

Answer by Mr Nicholls

Yes, we accept that. The tsunami level set for Koeberg is 7m. When the designers designed Koeberg they said what would be the worse tsunami we could have and the only zone is 4000km away, which is the South Sandwich Islands. The worst tsunami it could generate is 4m so we added to that the maximum possible high tide we could ever have and it came to a bit less than 7m, so we chose 7m as our target value and then we added an 8m terrace. Koeberg can withstand a 14m tsunami. The problem at Fukushima was that they actually started out with an assumption of a 1.7m tsunami, which later was qualified to 5.7m but they were still something like 2m below where Koeberg is. They would argue that the tsunami risk at Koeberg is less than the tsunami risk at Fukushima so we have a consideration of

tsunamis here, some plants in the world don't. The Japanese could not raise the power station up by 10 metres. Yes we have looked at tsunamis in our design.

Question by Mr Iosiphakus

Is the Chernobyl area clear for people to live there?

Answer by Mr Nicholls

People are starting to go back but there is a real environmental problem with Chernobyl. It became a nature reserve. Animals are starting to come back from extinction from the area and some environmentalists are complaining that we shouldn't destroy this environmental nature reserve.

Question by Mr Iosiphakus

How many years ago did Chernobyl happen?

Answer by Mr Nicholls

30 years ago (1986).

7. NNR Progress feedback on the implementation of the Emergency Plan Exercise findings

The NNR will present the progress feedback at the next PSIF meeting to be held on 27 June 2013.

8. Progress feedback on the position of the PSIF Chair by Dr Tim Hill

The advert was placed in the local press (Weskus Nuus, Tygerburger and Impact 24/7) and Eskom was asked to circulate it to PSIF database. Thus far only one nomination was received to date. In April the NNR Board will convene and make a final decision.

Comment by a resident

I would like to make a comment that the newspapers in Atlantis are the song and the voice and therefore if you don't advertise in that two you will never get any results from Atlantis.

Answer by Mr Phidza

The advert was placed in both the Weskus Nuus and Impact 24/7. Weskus Nuus has a circulation of approximately 15 000 per month. Two special editions were run on both newspapers to create effective awareness.

9. Presentation on the Integrated Koeberg Nuclear Emergency Plan by Dr Elmien Steyn of the City of Cape Town (Special Planning and Spatial Infrastructure)

- PAZ (Precautionary Action Zone): 0 – 5km
- UPZ (Urgent Protective Action Zone): 5 - 16km

Evacuation times: in the 0-5km area we need to evacuate people within four hours. No further development is permitted in this area - only if it is place-bound so development on the plant is linked to the operations of the plant. Within the 5km to 16km area we need to evacuate people within 16 hours after the evacuation order was given. There are 142 000 people within 0-16km. Depending on the situation/wind direction, the instructions given or the recommendations coming from Eskom's side, we can also shelter people.

Comment by Dr Steyn

At the previous PSIF the question was raised as to where the Integrated Koeberg Nuclear Emergency Plan was. The Plan with the procedures is confidential and is being held by the CoCT.

The role of the CoCT - The CoCT Disaster Risk Management Centre is the custodian on behalf of the CoCT, for the execution of this emergency management plan and is specifically tasked with the responsibility of ensuring that the public safety arrangements are in place in case of an emergency here at Koeberg. Our focus is mainly on the population residing within the 16km area of the plant. Over and above the Integrated Koeberg Nuclear Emergency Plan we are also using a lot of other plans and agreements that are in place and everything is aligned with the Integrated Koeberg Emergency Management Plan. This forms the basis of a lot of our procedures and emergency plans. It is our Major Emergency Management Plan (MEMP) and provides guidelines to us on how we need to implement and react in case of a major incident within the CoCT areas. Aligned with that is our Standard Operating Procedures (SOPs) to provide guidance to us. This is over and above our Disaster Management Act and more specifically aligned with the plans is the Memorandum of Agreement (MOA) that we signed over the years. This specific MOA is between the City, Eskom, and the Provincial Government of the Western Cape and then one between the City and the provincial government of the Western Cape and then one between the City and its neighbouring municipalities, especially for evacuation purposes, or should we need more assistance if we cannot handle everything. These neighbouring municipalities are normally the pre-district municipalities adjacent to the CoCT, West Coast, and Overberg - they all have disaster risk management centres.

Question by Mr Lodewyk

What is the reason for the 16km zone?

Answer by Dr Steyn

As explained earlier, it is based on the plant's design and prescribed by the National Nuclear Regulator.

Question by Mr losiphakus

Going back to the zero time, when do we put this on? Do we have a monitor which will be an indicator to us that something is happening now, that tells everybody to start going? (Time Zero clock).

Answer by Mr Trollope

We have what we call emergency action levels/plant indicators. There is a Technical Support Centre of highly skilled engineers who advise us when we need to act/evacuate. Time zero is not the time zero of the release. Time zero will be well before that and it would be based on what the plant is actually telling us well before, and our success in terms of mitigating and not mitigating our situation. All non-essential staff can leave site and join their families. The essential staff will be divided into shifts and they will need to come back at various times.

Question by Mr Lodewyk

Every morning we have a traffic jam in Table View with about 5% of the residents leaving towards town. What is going to happen with 135 000 people in a panic. What do you think about this? It will be a big problem. Where is the Disaster Risk Management Centre in the mornings?

Answer by Dr Steyn

Everything will be managed from the Operational Disaster Risk Management Centre. Joint decision making will also take place there. All the instructions will go from there to traffic officers, metro police, law enforcement, etc. As indicated previously by the Power Station Manager, Mr Bakardien, the traffic flow will not be the same as in normal circumstances, therefore specific measures have been put in place.

Question by Mr losiphakus

When everyone gathers at the clean-up area to be frisked, what registration are they expected to complete?

Answer by Dr Steyn

It is a normal registration form. The purpose is to have some form of accountability should someone call to find out if a family member is present.

Question by Mr Meyrick

The Atlantis Police Forum is totally ignorant of what happens with regards to Disaster Management. People in Atlantis are ill-informed about the EP plan. Can you not liaise with the local SAPS offices and do some form of awareness?

Answer by Mr Phidza

On 26 February 2013, during the hand-out of the Siren Test leaflets, we engaged the Atlantis SAPS on the EP plan as we realised their lack of knowledge. All their counsellors were engaged and informed about our findings. We have measures and plans in place to test the levels of understanding using their own forums as platforms. Over time it will be tested.

10. General

Question by Mr Iosiphakus

Does the iodine pills have expiry dates?

Answer by Mr Nicholls

By law yes, because all medicine by law needs to have an expiry date, it has one, but in practice, it still works so the pills are condemned as it has a cycle of three years, after which it needs to be recycled.

11. Date of the next PSIF meeting

The Deputy Chairperson thanked everyone who attended the PSIF meeting.

The next PSIF meeting is scheduled for Thursday, 27 of June 2013 at the Nuclear Auditorium – Bulk Stores.

Abbreviation/Definition list

Abbreviation	Description	Abbreviation	Description
KNPS	Koeberg Nuclear Power Station	CoCT	City of Cape Town
KOU	Koeberg Operating Unit	IAEA	International Atomic Energy Agency
NNR	National Nuclear Regulator	DOC	Disaster Operations Centre
KPSIF	Koeberg Public Safety Information Forum	SABC	South African Broadcasting Corporation
ISO	International Standards Organisation	mSv	Millisieverts
PSM	Power Station Manager	EP	Emergency Plan
SAPS	South African Police Service	UPZ	Urgent Protective Action Planning Zone
MW	Megawatts	Emergency	An event that requires taking prompt action, or the special regulation of persons or property, to limit the risk to people's health, safety or welfare, or to limit damage to property or the environment
ECC	Emergency Control Centre	Evacuation	The rapid, temporary removal of people from the area to avoid or reduce short-term radiation exposure in the event of an emergency
Emergency Plan	A document describing the organisational structures, its roles and responsibilities, concept of operation, means and principles for intervention during an emergency	Plant	Nuclear Power Station with associated components, machinery, equipment or devices

Abbreviation/Definition list

Abbreviation	Description	Abbreviation	Description
Public Notification	Notification to the public of an emergency and the appropriate protective actions to be taken by using the installed siren and loudspeaker system, as well as local authorities, local radio and television station.	Radiation	Energy released in the form of particles or electromagnetic waves during the breakdown of radioactive atoms.
Release	The controlled or accidental discharge of radioactive substances into the environment	Sheltering	A protective action whereby members of the public stay indoors with windows and doors closed, to reduce their exposure to radioactive material in an emergency situation.
Accident	An unintended event, including operating errors, equipment failures or other mishaps.	Disaster Management	A continuous and integrated multi-sectoral, multi-disciplinary process of planning and implementation of measures aimed at: <ul style="list-style-type: none"> a) Preventing or reducing the risk of disaster b) Limiting the severity or consequences of disasters c) Emergency preparedness d) Responding rapidly and effectively to disaster; and e) Post-disaster recovery and rehabilitation