Minutes of the Koeberg Public Safety Information Forum (PSIF)

Date: 27 September 2012

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 WT Henstock	Resident
Mr N Lee	Resident
Mr R Mayhew	Table View Ratepayers Association
Ms S Mayhew	Table View Ratepayers Association
Mr D Lingard	Resident
Ms S Payne	Resident
Mr H White	Atlantic Beach Home Owners Association
Mr R Williamson	Melkbosstrand Ratepayers Association
Ms Williamson	Resident

OFFICIALS	DESIGNATION/ORGANISATION
MS D Joshua	Senior Advisor Stakeholder Management
Mr L Phidza	Stakeholder Management Manager – Eskom Koeberg
Ms P Radebe	Communications Officers – Eskom Koeberg
Mr K Featherstone	Acting General Manager Nuclear Support – Eskom Koeberg
Mr K Engel	Plant Manager – Eskom Koeberg
Mr J Dyabaza	Senior Advisor Stakeholder Management – Eskom Koeberg
Mr D Nicholls	General Manager – Nuclear Engineering
Mr M Saaymans	Emergency Management – Eskom Koeberg
Mr C Forsyth	Senior Technologist Engineer – Eskom Koeberg
Dr T Hill	Manager – Koeberg Programme National Nuclear Regulator
Mr T Tselane	Senior Manager: Compliance Assurance and Enforcement Division (National Nuclear Regulator)
Mr B Mnisi	Officer: Environmental Affairs (CoCT)
Mr J Spotten	Head: Transport Modeling and Systems Analysis Transport Planning (CoCT)
Mr S van Rensburg	Head of Disaster Management Centre (CoCT) – Area North

1. Welcome

The Deputy Chairperson welcomed everyone to the PSIF 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:

- Ms C de Villiers Manager: Parliamentary Affairs (CoCT)
- Ms A Lee Resident
- Mr J Pereira Resident
- Mr G Moonsamy Communications and Stakeholder Relations Manager (NNR)
- Mr R Bakardien Power Station Manager – Koeberg Operating Unit

3. Acceptance of the Minutes of the previous Meeting

The Minutes were accepted by Mr Lee and seconded by Mr Mayhew with the following corrections. On page 5 the question posed by Mr Mayhew and the answer given by Mr Saaymans was repeated (question and answer occurs twice on the same page). This was subsequently rectified.

Comment by the Deputy Chairperson

The Deputy Chairperson apologised for the Minutes being distributed late and assured the members that every effort will be made to distribute the Minutes early.

Comment by Mr Mayhew

Mr Mayhew expressed his concern regarding the late receipt of the Minutes. He mentioned that in one of the previous PSIF meetings a commitment was made that the Minutes will be received within three weeks of the meeting. The issue is with the time lapse between meetings, which makes it difficult to recall the content. He mentioned that he raised a concern about this in the previous meeting. He also requested that the Agenda indicating the meeting venue and topics be sent beforehand so as to confirm where the meeting will be held.

Response by Mr Phidza

Mr Phidza committed that Eskom will ensure that the Minutes are sent to all the members as soon as possible (goal is to deliver it within three weeks). He informed the members that the agenda for every meeting has always been proposed at the end of the meeting. The Agenda for every meeting is forwarded to the members electronically and advertised in four local newspapers (Weskus Nuus, Table Talk, Tygerburger and Impact 24/7) prior to the meeting.

4. Matters arising from the previous meeting

Comment by Mr Williamson

Mr Williamson requested that the name of the organisation he represents be added. He also suggested that the representative organisations, where applicable, be added next to all the members attending the PSIF to indicate their affiliation and representation.

Response by the Deputy Chairperson
The Deputy Chair agreed that this can be accommodated but the onus is on the individuals to reflect the organisations they represent in the attendance register. By default there is an assumption if there is no indication on the register of an individual representing an organisation, that they are attending the meeting in their private capacity.

5. Feedback on the PSIF Chairperson appointment – Dr Tim Hill (NNR)
Dr Hill confirmed that he received an email from Mr Moonsamy tendering his apology for the PSIF. He (Mr Moonsamy) noted that he had contacted the previous PSIF Chairperson, Mr Clarence Mentor, two weeks prior to the PSIF Meeting of 28 June 2012, to confirm his resignation as Chairperson. The resignation has been received in writing. The NNR will invite nominations for the Chairperson position via the normal public notice process. The members present were invited to submit nominations and complete the appropriate nomination forms.

Response by the Chairperson
The Deputy Chair commented that there is a history of this process not working. There were times when people were asked to stand as Chairperson and there were no volunteers. She extended the invitation to the members inviting nominations for the position of Chairperson. Mr Mayhew nominated the Deputy Chair as Chairperson.

After a short debate it was clarified that verbal nominations are not acceptable - the legal NNR process has to be followed. The nomination forms are available from the NNR and can be completed by any member and forwarded to the NNR directly for consideration. It was agreed that nomination forms will be made available after the meeting.

Comment by Mr Wilson
Mr Wilson reminded the meeting that according to the Constitution of the PSIF that was accepted in the last meeting, the Deputy Chair has the same powers as the Chair and doesn't need permission from the members to chair the meeting.

6. Koeberg's quarterly feedback by Kevin Engel (Koeberg Plant Manager):
Summary of presentation:
- Clock resets (Human Performance significant events) - 2 (on target). Target < 4 events
- INPO index (being assessed as INPO Level 2 station) – not meeting target currently at Level 3
- Forced Loss Rate – Target < 0.2% currently at 4%
- Outage duration – Outage 219, scheduled for 69 days is in progress: Outage started on 17 September 2012
- Lost Time Injuries (LTIs) contractors and Eskom employees - < 0.2%

Highlights (last quarter):
Koeberg was certificated on the following (on first pass):
- ISO 9001: Quality Management Systems requirements
- ISO 14001: Environmental Management Systems requirements

- The Annual Nuclear Safety Awareness Seminar was conducted in Cape Town in July 2012 (Theme: Everyone is personally responsible for Nuclear Safety
- Electricté de France (EdF) and Koeberg are moving towards a partnering arrangement on technical and other matters.
- The Koeberg Emergency Plan Exercise (reviewed every two years), conducted by the NNR took place on 5 September 2012 where the station's emergency preparedness was tested successfully.

Koeberg focus areas:
Intensive focus is being given to the three areas of Koeberg business. A senior manager has been assigned to each. The areas are:
- Leadership
- Vendor management
- Outage duration

Question by Mr Mayhew
Please elaborate on the 5 September 2012 NNR Exercise.

Answer by Mr Engel
It was an Emergency Planning exercise focussing on external communication at our Joint Media Centre (JMC) in Bellville. At Koeberg we went through the normal accident protocols. The exercise was evaluated by a group of NNR officials and observers. The City of Cape Town was also involved. The exercise went well and what stood out was the readiness and level of professionalism displayed in dealing with the exercise. The Koeberg Emergency Controllers had all received media training during 2012, which assisted with the smooth running of the media part of the exercise.

Question by Mr Mayhew
Will you provide us feedback on the findings of the NNR exercise at the next PSIF meeting?

Response by Mr Engel
It was an NNR exercise so they will report on the findings of the exercise.

Comment by Mr Tselane
We can add it as an agenda item for the next meeting.

Question by Mr Mayhew
What is meant by a vendor?

Answer by Mr Engel
It is an american term for a contractor.

Preliminary feedback on 26 September 2012 incident (Mr Kevin Engel)
Yesterday, we experienced a problem on Unit 1. During a usual activity performed in Koeberg's High Voltage yard, employees accidentally initiated a signal which caused a turbine trip. As per design, the reactor did not trip and the unit was reconnected to the grid within 5½ hours.

Comment by Mr Mayhew
Thank you for informing us of this recent event.

7. Fukushima update by Mr Dave Nicholls

Summary of presentation:
Current Koeberg status (as built)
Planned Koeberg modifications

1. Threat to the station is losing the sea water cooling – thus looking at installing a cooling tower 15m x 20m and 4m in height provide cooling if we 'lose the sea'
2. Diverse and independent auxiliary feed system - put in another pump taking suction directly from our cooling tank
3. Filtered containment venting system
4. Seismically reinforce potable water tank
5. On site (but remote) diesel generator support
6. "Plug and play" fluid and electrical connections for major safety systems

Proposed coping times:
- No local operator actions should be required in the first eight hours.
- The plant systems have to be able to cope with an extended loss of all AC power without the option of connecting mobile equipment for up to 24 hours.
- Adequate on-site diesel supplies have to be available to fuel diesel generators for up to 14 days
- The on-site water inventory has to be adequate to supply all units with feed water for 30 days.
- The plant has to be able to remain safe with a complete loss of ultimate heat sink for up to 30 days.

Question by a member
What are SAMGs?

Answer by Mr Nicholls
SAMGs are Severe Accident Management Guidelines. They are not procedures because procedures are too prescriptive.

Question by Mr Williamson
Is there still a possibility that the Open Cycle Gas (OCGT) Turbines at Ankerlig will be converted to combined cycle?

Answer by Mr Nicholls
It's only logical if there's a gas source available. Diesel fuel is definitely not the source. Personally, I don't think it will happen.

Question by a PSIF member
What magnitude earthquake can Koeberg withstand?

Answer by Mr Nicholls
Koeberg's design can withstand an earthquake of 0.3g which translates to an earthquake of a magnitude of 7 on the Richter scale.

Question by Mr Mayhew
I understand that we have a lot of systems built for an emergency. You've mentioned the concept *redundant until wanted*. How many checks are done on these systems that are not doing anything until they are actually needed? What are the time scales for checking?

Response by Mr Nicholls
We have a very comprehensive set of rules contained in the Safety Surveillance Requirement Manual (SSRM) that stipulates how all the equipment needed for safety must be tested, how often and for what time period. The emergency (outside) diesels, for example, needs to be tested twice a month. If we find that one of those machines fails its tests, we would follow a process where we have a limited period to fix it or shut the plant down.

Question by Mr Lee
Is this by international standards?

Response by Mr Nicholls
Yes, we have just recently done a review of our SSRM and our Technical Specifications (Tech Specs) against EdF practise.

Question by Mr Mayhew
How do you test the emergency sprays that you spoke about, because it is impossible to test them while the plant is running.

Response by Mr Nicholls
We blow air through them and then, with the aid of infrared cameras, we verify that the nozzles are not blocked.

Question by Mr Williamson
What about valves?

Response by Mr Engel
Valves are also covered by the SSRM. We don't check them all at once; we test them in sections continuously, via specific periodic tests. We run in-service inspection programmes based on American Standards (ASME 11). The testing programme requires that, if we find anything abnormal we have to do what they call an *Extent of Conditions*. This means, if one valve of a type fails, you have to check all the valves of the same type in a similar application.

Question by Mr Mayhew
Do you experience many failures?

Response by Mr Engel
We seldom have valve failures. We do experience deviations in stroke times (the time for the valve to close or open) which under our rules, are treated as a failure if it deviates by more than 10%.

Question by Mr Williamson
At present we have, outside of Koeberg, a 5km and 16km zone. These enhancements to the present plant, is it likely to change as a result of this? Secondly, if we build a second plant at Koeberg, there's talk about the exclusion zone for that plant being a lot less. Will that influence the requirements of the existing plant?

Response by Mr Nicholls
The modifications to Koeberg over the last ten years have reduced the Core Damage Frequency, which is the likelihood of the core being damaged in an accident, by a factor of about 10. There is no direct link between the improvement in the safety of Koeberg and the Emergency Plan Zones. Changes to the Emergency Plan zones have to be motivated and approved by the NNR. Currently there is no such submission. We have draft documentation on how we calculate the Emergency Planning Zone and the requirements for new nuclear plants, which imply that we have to have full ownership of the land within the evacuation zone. That will imply that the New Build plant on the Koeberg site will not have the same Emergency Planning zoning criteria as the existing Koeberg plant.

Comment by Mr Williamson
On this site, does the present Koeberg Emergency Plan still stand?

Response by Mr Nicholls
Yes it does.

Question by Mr Lee
Is it possible that we could have a copy of your presentation sent out with the minutes?

Answer by Mr Nicholls
If possible the presentation will be provided.

8. Revised Traffic Evacuation Model Presentation by Mr John Spotten (CoCT)

Summary of presentation:
Sectors to be evacuated
- Precautionary Action Zone (PAZ) - a 5km radius from Koeberg Nuclear Power Station (KNPS).
- Urgent Protective Action Zone (UPZ NE) – a 67 degree sector to the North-East from the 5km to the 16km radius from KNPS.
- Urgent Protective Action Zone (UPZ SE) – a 67 degree sector to the South-East from the 5km to the 16km radius from KNPS.

Evacuation criteria specified by the NNR

- Everyone has to evacuate the PAZ within four hours.
- Everyone has to evacuate the UPZ NE and the UPZ SE Sectors within 16 hours.

Scenarios tested for current and future population

- Weekday morning peak (09:00 peak)
- Midnight
- Saturday during the day

General assumptions

- Residents outside the Evacuation Zone would return to evacuate their families
- Future population estimate based on a high growth rate (as based on West Coast Road options)
- All transient people, including employees in the Evacuation Zone normally resident outside, would also evacuate
- PAZ to evacuate with the UPZ SE (5 – 16km)

Model based on information at a detailed transport zone level (100 transport zones in total)

- Population by income group
- Car ownership by Income group
- Employment, including transients
- Road network capacity

Population information provided from CoCT
Strategic Development Information

- 2009 estimated formal households.
- 2009 informal population at census sub-place level counted from aerial photography.
- 2009 backyard dwellings.
- Including recent Development Framework Forecasts for West Coast from Garden Cities and Milnerton Estates.

Evacuation time calculation based on*:*

- Number of people to be evacuated (including employees)
- Available road capacity on evacuation routes

UPZ SE Evacuation
UPZ SE Current 2010 Evacuation Time = 9.2 hours
UPZ SE by 2018 Evacuation Time > 16 hours. Intervention required – first lane of Sandown Road completed. Evacuation time = 13.0 hours

PAZ Evacuation
PAZ Current 2010 Evacuation Time = 3.0 hours
PAZ Future 2035 Evacuation Time = 3.4 hours

UPZ NE evacuating south only
UPZ NE Current 2010 Evacuation Time = 8.7 hours
UPZ NE Future 2035 Evacuation Time = 21.2 hours
Intervention required in 2025

Worst case 09:00 assumptions

- One hour assumed to reach a state of readiness to evacuate for private vehicles, 1.5 hours for public transport operators
- 70% of private vehicles assumed to be initially outside the area
- Buses to evacuate households without cars
- Extra road capacity due to added BRT bus lanes only happens outside the 16km area and therefore does not increase road capacity
- Road capacity reduced to 80% due to unforeseen disruptions on the evacuation routes

Sensitivity testing (as part of the model functionality review)

Zone	Requirement[34]
0-5km (PAZ)[5]	Within the PAZ, evacuation of the public in all sectors, i.e. 360° within 4 hours
5-16km (UPZ)[6]	Within the UPZ area (or intersecting this area), an evacuation time of 16 hours of the projected population, within any 67.5° sector

The TEM (Traffic Evacuation Model) was re-run in accordance with the NNR requirements

The following additional precautionary planning scenario assumptions were adopted:

– It was assumed that no contraflow lanes would be used;
– It was assumed that simultaneous evacuation of PAZ and UPZ must be tested;
– It was assumed that the UPZ NE must be evacuated both northwards and southwards.

Conclusions:

- The minimum requirement to be able to evacuate all sectors (PAZ and the UPZs) within the stipulated evacuation time limits is possible under current conditions.
- The practical consideration of evacuating the PAZ along with either UPZ NE or UPZ SE is also possible within 16 hours, the evacuation time limit for the UPZs.

Question by Mr Williamson
Have you factored in the talked-about West Cape development?

Response by Mr Spotten
No. The application has come in to change the boundary to the Urban Edge. The information is not at a detailed level. It is just at a general information level. We have not looked at time scales yet. They are predicting massive development in a short space of time, but no form of approval has yet been given.

Question by Mr Williamson
You have done the projecting until 2035?

Answer by Mr Spotten
We have, but this came up recently. The Eastern Sector will be taken into account soon, but not now. We are looking at about 200 000 households, which will amount to about a million people. The population of Cape Town is about 3-3.5 half million people.

Question by Mr Williamson
I presume your PAZ area (your update) excludes Melkbosstrand?

Answer by Mr Spotten and Mr Saaymans
Le Seur Street (Melkbosstrand) is the boundary according to our maps and is included in the 5km Zone which excludes the Atlantic Beach Golf Estate.

Question by Mr Lee
Explain why you haven't looked at the North East evacuation routes.

Answer by Mr Spotten and clarified by Mr Saaymans
We evaluate the evacuation in one direction only. The evacuation route that is modelled is not the only evacuation route available, and mass care centres can be established in many different locations. There are the east evacuation routes you can use to get access to any of the other Mass Care Centres. Mass Care Centres can also be established on the day – even the Cape Town Stadium could be used as a Mass Care Centre. Assembly points (found at the back of the annual Koeberg Emergency Plan Calender) and Mass Care Centres are loosely used, but could mean the same thing.

Question by Mr Williamson
Will this presentation be available on any website?

Answer by Mr Spotten
The City of Cape Town, will if possible, publish it on their website under "Traffic" or "Transport."

Question by Mr Mayhew
Is everything updated in this model against the backdrop of a perfect world? You are looking at the perfect world where everybody comes in and everybody goes out.

Answer by Mr Spotten
It is a reasonably conservative model. It is a theoretical model and not an exact science.

Discussion on results
A lengthy discussion followed the presentation in which the practicality of implementing the model was challenged. This was based on perceptions and events such as the recent opening of the new Makro Store and the current road infrastructure upgrades.

Even though it was clarified that the model demonstrates that evacuation is possible within the NNR specified criteria, that the assumptions in the model did not use 100% of the road capacity, that the roads were only used as per their current design (no change in direction of traffic), that the City has procedures to react and recover from incidents and accidents on the road and that the procedure for evacuation is stipulated in the Koeberg Emergency Plan Calendar, some members remained sceptical.

The question that still remained was about the practicality of the Evacuation Plan. It was proposed that we need to start afresh the discussion on the Emergency Plan and the Evacuation Plan and demonstrate how the timescales will be achieved. An option where the City of Cape Town and Eskom, along with the key role-players, can periodically share with the PSIF practical measures that will be taken against different aspects of the Emergency Plan, i.e. how to deal with traffic when there are multiple accidents, etc. The Secretariat proposed to discuss it further with the Deputy Chair and determine how to address the remaining concerns.

9. NNR status on the Fukushima response – Dr Tim Hill
Dr Tim Hill made a presentation on the proposed new legislation governing development within the 5km Emergency Planning Zone.

10. General
Comment by Mr van Rensburg
I understand the purpose of the Forum is to answer questions pertaining to the Emergency Plan. This should be done in the spirit of decency and respect and not to undermine and second-guess work done by various officials.

11. Date of the next meeting
The date of the next PSIF meeting is on **Thursday, 29 November 2012**, at the **Bulk Stores, Nuclear Auditorium (Koeberg Power Station).**

12. Suggested Agenda topics for the next PSIF meeting (29 November 2012)
- NNR feedback on the Koeberg Emergency Exercise of 5 September 2012
- NNR Chairperson and Deputy Chairperson feedback (progress feedback)
- Koeberg quarterly feedback