

S.O.S HARRISBURG



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Introduction

Le 23 mars 1980 les citoyens suédois ont tranché entre trois questions : 1. poursuite du programme nucléaire ; 2. arrêt de la construction de centrales et sortie du nucléaire en 2010 ; 3. arrêt immédiat.

Un an, quasi jour pour jour, auparavant commençait l'accident de Three Mile Island.

Ce jour là, le mercredi 28 mars 1979, Helena Oljemark, journaliste expérimentée âgée de 29 ans, diplômée de science politique et spécialisée dans les questions atomiques, couvrait avec Reinhard Spilker le grand hearing « Rede Gegenrede » organisé par le Ministre-président de Niedersachsen, le Dr Albrecht (CDU). Ce hearing, présidé par le Professeur Carl-Friedrich von Weizsäcker, le physicien atomiste qui s'arrangea pour que le programme de la bombe A allemande perdît du temps durant la dernière guerre mondiale, portait sur le projet de complexe — usine de retraitement et stockage de déchets nucléaires — que le gouvernement fédéral de Helmut Schmidt (SPD) voulait implanter à Gorleben, à la frontière avec la RDA, sous le couloir aérien Hamburg-Berlin. Trente experts pour et trente experts contre s'affrontaient, 8 h par jour, dans une des halles du parc de la foire de Hanovre. Le Dr Albrecht assista à tous les débats, du 28 au 31 Mars, puis les 2 et 3 Avril, qui étaient filmés et transmis dans des salles aux alentours. Tous les aspects, militaires, industriels, économiques, sanitaires et accidentels du projet furent traités sur le fond après un travail préparatoire orchestré par le Dr Helmut Hirsch et son équipe administrative et juridique durant les 6 mois précédent.

Reinhard Spilker a joué un rôle crucial durant les années 75 à 85 dans l'information de la classe politique allemande en organisant à Bonn, dans sa grande maison près de la Chancellerie, des rencontres de haut niveau pour les parlementaires et les élites des partis avec des experts nationaux et étrangers. Helena Oljemark travailla avec lui de 1974 à 1979.

Une grande manifestation allait avoir lieu à Hanovre en marge du hearing, le samedi 31 Mars. L'organisation des mouvements de citoyen était dirigée par Hermann Graf Hatzfeld, un personnage considérable. Le week-end qui précéda l'ouverture, le 27 avec le dîner de cérémonie, présidé par von Weizsäcker, offert en l'honneur des congressistes, il reçut dans son château de Schönstein le Chancelier Helmut Schmidt, différents leaders politiques et la fine fleur de l'opposition mondiale à l'énergie atomique, sélectionnée par Helmut Hirsch, des personnes comme Amory Lovins, de Friends of the Earth, Thomas Cochran du NRDC etc. Les blindés étaient déployés tout autour du château, canons braqués vers le parc, éclairé par des projecteurs de DCA. C'était l'époque de la RAF, Rote Armee Fraktion avec Andreas Baader et Ulrike Meinhof à sa tête... Les négociations qui eurent lieu cette nuit-là sont restées secrètes.

Ainsi ce hearing capital se déroula dans l'ombre de Three Mile Island et sous l'incommensurable menace qui pesait sur Harrisburg. Décalage horaire oblige, la tension gagna les participants dans la journée du jeudi. Les experts américains étaient suspendus au téléphone. Ils avaient sorti leurs modèles et abaqués et cherchaient toute information leur permettant d'évaluer le niveau de risque.

Ainsi, Helena Oljemark se trouvait dans l'œil du cyclone, aux premières loges pour apprécier la complexité de la situation et la terrible incertitude que les meilleurs experts tentaient vainement de réduire avec une information parcellaire et contradictoire.

Il est clair que sa compétence en science politique et cette expérience inoubliable lui ont donné l'idée de traduire ces quelques jours de crise en une pièce de théâtre pour la télévision suédoise. Le matériau de base, les enregistrements exhaustifs (sauf ceux avec le Président des Etats-Unis) de tous les échanges entre les divers responsables, direction de la compagnie Metropolitan Edison, autorités locales, de l'Etat de Pensylvanie et commissaires de la NRC, pouvait être consulté dès l'automne 1979 en vertu du *Freedom of Information Act* à la *Library of Congress* de Washington.

Elle effectua le travail de documentation avec Bo Melander et le correspondant new-yorkais de la radio suédoise Arne Thorén. La pièce fut jouée et diffusée le 21 février 1980 durant la période la plus intense du débat national sur la sortie du nucléaire. Elle connut un tel retentissement qu'elle était en 1999 encore évoquée en bonne place et en détail dans l'histoire de cette période.

On sait que c'est la deuxième option qui rassembla le plus de votes :

option 1, poursuite du programme nucléaire :	18,6%
option 2, arrêt de toute construction et sortie avant 2010 :	39,1%
option 3, sortie immédiate :	38,7%
blanc :	3,3%

Les intentions de vote en faveur de la sortie immédiate culminèrent début mars 1980 avec 40%, nettement devant les deux autres. Un tassement se produisit ensuite qui donna in extrémis la victoire à l'option mi-chèvre mi-chou. Une douche froide pour Helena Oljemark et ses amis.

La sélection des échanges pour réaliser ce drame documentaire représentait un véritable défi. On peut s'en rendre compte en allant consulter, traduits en français à partir de la publication qu'en firent 20 ans plus tard en 1999 les revues *Nucleonics Week* et *Nuclear Fuel*, les enregistrements portant sur la seule journée du 30 mars 1979¹.

On doit noter ici que la catastrophe de Tchernobyl inspira au Directeur Scientifique de la Pravda, Vladimir Goubareiev, grand ami de Valery Legassov Chef de la Sûreté Nucléaire de l'URSS (qui se suicida deux ans jour pour jour après Tchernobyl), et du physicien Evgueny Velikhov, conseiller scientifique de Gorbatchov, la pièce de théâtre *Sarcophagus*, présentée avec succès en 1987 à Moscou et mise ensuite à son répertoire par la *Royal Shakespeare Company*. Cette fiction réaliste se passe dans une unité de soins intensifs pour grands irradiés de l'Hôpital N° 6 de Moscou au sein du Centre atomique de Kourtchatov. Les patients y évoquent les péripéties de leurs épreuves, à commencer par le « bronzage atomique » provoqué par les flux colossaux de rayons β émis par les gaz rares rejetés. Cette pièce nous apprend qu'il y eut bien d'autres accidents graves en URSS. Pour preuve, l'un des protagonistes, en fait le personnage central de la pièce, est surnommé « l'Immortel » pour avoir survécu à une dose qui aurait tué n'importe qui d'autre. Goubareiev profite de la situation créée par Tchernobyl pour révéler implicitement les secrets les mieux gardés. La *Glasnost* a des limites très en deçà de celles du *Freedom of Information Act* !

Après l'arrivée de la Gauche au pouvoir, à l'automne 1981, bien introduit par le directeur de l'information Louis Bériot (*La France Défigurée*), j'ai proposé la traduction française de la pièce d'Helena Oljemark au directeur de la chaîne publique *Antenne 2*, le regretté Pierre Desgraupes, considéré comme le modèle du journaliste et patron perspicace et indépendant. Je lui présentai rapidement le sujet et à ma suggestion de la monter pour la télévision dans le cadre d'une dramatique d'une heure, sa durée, il me rendit le manuscrit sans même le feuilleter en observant : « *Cela n'intéressera personne...* ». L'entrevue était terminée.

Helena Oljemark, personne brillante, exigeante et fragile, s'est suicidée durant l'été 1983.

Ce document est dédié à sa mémoire.

Y.L. Mars 2012

¹ <http://www.dissident-media.org/infonucleaire/feuilleton.1.tmi.html>, soit 70 pages expurgées des jurons et autres considérations non indispensables !

PROLOGUE

NARRATOR :

It is early morning on March 28th 1979.

04 00 37

A pump trips at reactor no. 2 at the Three Mile Island nuclear power plant ten miles from Harrisburg, Pennsylvania, USA.

04 00 39

NARRATOR :

Two seconds later, William Wittlock is woken up by a tremendous roar. The noise comes from the turbine building. The turbine has shut down automatically, and highly pressurised steam is released through a safety valve.

WILLIAM WITTLOCK :

It roared with a tremendous roar of releasing steam. It woke me up and I looked out the window and saw this huge column going up in the air and roaring. I'm very much concerned about it, and I think everybody here in Goldsboro is concerned.

04 00 45

Six seconds later the reactor itself shuts down, or "scrams", also automatically. The control rods drop into place among the bundles of uranium making up the reactor core. Fissioning slows down, but one must carry on cooling the uranium core, as otherwise there is a risk of a melt-down occurring, a so-called china-syndrome. Surrounded by flashing lamps and warning signals from the instrument panel, the two control-room operators, Craig Faust and Edward Friedrich try to cope with the unusual situation. A nuclear power inspector later told the Washington Post: *"the operators wondered what the hell was going on"*

04 45 00

Station Manager George Kunder is on the spot.

ACTOR (George Kunder) :

It was an unusual situation: according to the instruments, the pressure inside the reactor was simultaneously high and low.

05 00 00

NARRATOR :
The coolant pumps start vibrating.

05 14 00

NARRATOR :
Two of the pumps are shut so that they won't
breakdown.

05 41 00

NARRATOR :
The two remaining pumps are shut down.
Coolant water no longer reaches the reactor core.

06 54 00

NARRATOR :
The pumps are started again but then shut again.
Several alarms indicating increased radioactivity in
the system go off.
At a hearing after the accident, operator Faust
recalls:
*"All those alarms... I wanted to throw the entire
control panel out, it wasn't giving us any useful
information".*

06 56 00

NARRATOR :
The station manager, George Kunder, declares a
state of emergency throughout the plant. This is an
internal warning to the plant personnel, who start
aiming for so-called safe places. Some of them jump
into their cars in order to leave the island. Two of
them manage to get out before the gates are shut.

07 02 00

NARRATOR :
The power company, Met Ed, contacts Civil Defence
Chief Kevin Molloy:

ACTOR (Molloy) :
My first reaction when they called around 7:00 am
was, *"do we have to evacuate" ?*

07 15 00

NARRATOR :

Several authorities are notified. The auxiliary feedwater building is evacuated.

07 24 00

NARRATOR :

The Three Mile Island power station manager Gary Miller now declares a '*general emergency*', that is, areas outside the plant gates are also affected now. All concerned authorities must be informed.

08 00 00

NARRATOR :

Gary Miller has now realised that the core has been seriously damaged.

08 25 00

NARRATOR :

Pennsylvania's Civil Defence Agency prepares for a review of evacuation procedures for the civilian population. Civil Defence Chief for Dauphin County, Oran Henderson, calls Governor Richard Thornburgh, and later admits

ACTOR (Henderson) :

"We didn't know what we should recommend, we lacked so much knowledge about what was going on".

NARRATOR :

At this point, WKBO radio in Harrisburg broadcasts the news. The radio station's traffic reporter, "Captain Dave" has heard on his CB radio that the police and the fire brigade have been mobilised in Middletown, three miles from the nuclear power station.

CAPTAIN DAVE :

I have a friend who works in the fire company... he called me on the CB radio early in the morning and asked me if I had any information as to why police and fire-chiefs had been called down to Dauphin County Control Civil Defence Agency, and why the ... all of the units had been put on alerte I was driving around on my normal traffic rounds and I noticed there was no steam coming out of the stacks at TMI. The steam that comes out of the stacks is a

natural reaction to cooling of the reactors. And on this morning I noticed there was no steam coming out of any of the stacks at all. Something didn't add up : if the stacks aren't running, naturally the reactors aren't running, so I took a hunch and I called our news director, Mike, back at the station, on the two-way here in the vehicle...

T200 mobile to station ????

Mike ? Mike, there's no steam coming out of the stacks at Three Mile Island and I have a friend who called me on the CB a while ago and wanted to know if we had anything on the fire equipment and chiefs being called to county control for something ... do you know anything about it ?

MIKE PINTEK :

No, but we'll call County control right now, OK ? ... (dialling telephone) ...

Yeah, this is Mike Pintek, WKBO News, Harrisburg Pennsylvania... I would like to talk to Mr Fabian please... well, get him out of the meeting...

Mr Fabian ! Mike Pintek, WKBO News, Harrisburg, Pennsylvania... What is going on at Three Mile Island ?... A general emergency. What is that ?

Well, what's the prob... OK, well what is the problem ? Well, is there any danger to the public ?

RADIO NEWS BROADCAST :

Metropolitan Edison Company officials had to shut down their Three Mile Island nuclear power station unit number 2 this morning after an accident occurred within the plant's turbine system, an accident that resulted in the release of radioactivity into the atmosphere...

Around four o'clock this morning something went wrong in the turbine system of Three Mile Island Unit no. 2. Whatever went wrong eventually caused a leak into the atmosphere of radioactive steam. Whatever went wrong in that system also led Met Ed officials to declare a state of emergency and to call in local emergency officials and the state police. In fact we have learned that there were preparations being made this morning for the possible evacuation of some residents in York county.

That didn't happen...

Keep in mind though that State Emergency officials were not notified of the situation until...

08 45 00

By now six NRC inspectors from the local office

in Pennsylvania have jumped into their emergency van and are on their way to Three Mile Island. Once there, they are faced by a serious problem : the telephone lines are overloaded and have jammed.

09 06 00

The news of the accident spreads ; AP reports that *"officials at the Three Mile Island Nuclear Plant have declared a 'general emergency' ; a state police spokesman said today"*.

There are no details, no explanations of what a 'general emergency' is. AP quotes "spokesman" James Cox as saying that *"whatever it is, is contained in the second nuclear unit"*.

The telegram sets the media ruahing in and a few hours later 120 journalists have gathered around the plant. The local residents begin to get worried by all the commotion.

10 05 00

NARRATOR :

The Pennsylvania NRC officials reach Three Mile Island. More alarms ring in the control room, indicating that the radiation levels are too high. The operators have put on gas masks, which complicates their work.

11 38 00

NARRATOR :

Coolant water diminishes and the core is uncovered until 15 08

13 50 00

NARRATOR :

A steam explosion takes place inside the reactor.

14 00 00

NARRATOR :

Emergency cooling begins, and boron is sprayed over the core. To the people in the control room it becomes obvious that hydrogen gas has escaped into the reactor vessel.

More detailed reports of the accident start reaching the public :

Judging by the information available, it appears that

this is the most serious accident of its kind to have happened in the USA. This is how a spokesman for the NRC described the situation today. Accounts are varied as to what caused the reactor to malfunction. A spokesman for Harrisburg's Civil Defence Agency stated that there are no plans to evacuate anyone in the area, even though radioactive radiation has been detected outside the plant. Opponents to nuclear energy maintain that regulations are not sufficiently stringent and that it is impossible to construct completely safe nuclear plants.

17 50 00

NARRATOR :

Experts on the spot try to eliminate the hydrogen bubble by increasing the pressure inside the reactor, while the NRC still doesn't know that the bubble exists. Core cooling has started again, and the core is now covered by water. The temperature inside the reactor decreases overnight. On Wednesday night Reuters reports that :

The NRC's spokesman Joe Fouchard has said that the night shift may have received some radiation. It appears also, he said, that the causes of the accident are more serious than the faults in the cooling system which have hitherto been considered the fault. It appears that the reactor core has received some damage.

NARRATOR :

That evening CBS News' well-known newscaster tells the USA that:

NEWSCASTER :

It was the first step in a nuclear nightmare as far as we know at this hour, no worse than that. But a government official said that a breakdown in an atomic plant in Pennsylvania today is probably the worst nuclear accident to date...

NARRATOR :

Thursday morning begins as usual with ABC's *"Good Morning America."* Metropolitan Edison Power Company's chairman tells viewers that the reactor will soon be safely shut down, and that no-one in the area will come to harm.

At a press conference in Hershey, Pennsylvania, the company's Director of Operations, John Herbein, is confronted by a large number of reporters.

ACTOR (Reporter) :

Why did the company wait three hours before warning area residents of the accident ?

NARRATOR (Herbein) :

There was no delay. We were carrying out normal plant procedures up to 7 am.

ACTOR (Reporter) :

I live a mile from the plant... is your plant a lemon ?

MIDDLETOWN MAYOR ROBERT REID :

Why wasn't my community told of the danger for three hours ?



John Herbein : clash with the press

HERBEIN :

I apologise, we will do better... we didn't injure anybody with this accident, we didn't seriously contaminate anybody, and we certainly didn't kill anybody.

NARRATOR :

Thursday is a day of questioning. The NRC's Chairman, Joseph M. Hendrie is interrogated at a Congressional hearing. Locally, people wonder how much radioactivity really leaked out. Two delegations from the Congress visit the damaged plant. The company tries to reassure everyone, but the politicians are sceptical.

WEAVER :

You and other members today have constantly said apparently we don't... we're not sure what's going on... we think there's enough water to keep the situation going along... : How close did we come to a core meltdown, to a China Syndrome ?

HENDRIE :

I think we were nowhere near it.

WEAVER :

Could it have happened ?

HENDRIE :

In principle, Mr Weaver, we could have a meltdown situation at any operating plant going on right at this moment. But the chances of that happening are really very small, diminishingly small.

NARRATOR :

Pennsylvania's Lieutenant Governor William S.

Scranton III visits the auxiliary building for a personal inspection.

ACTOR (Scranton) :
I was suited up in an extraordinary suit

NARRATOR :
Later he told reporters

ACTOR (Scranton) :
I feel fine.

NARRATOR :
People are still more concerned when a well-known biology professor, 1967 Nobel Prize winner George Wald, visits the area. He urges pregnant women and children to leave the area. The authorities in Pennsylvania are drowned by demands for information from pregnant women who want to know what to do.
Telephone contact between the island and the mainland breaks down completely.

ACTOR (NRC inspector) :
For several hours we tried to cope with the situation by Walkie-Talkie. The whole situation was incredible.

NARRATOR :
Thursday is to be followed by a dramatic Friday. Concern is high now also among the central authorities in Washington DC. The five heads of the authority with the greatest responsibility, the US Nuclear Regulatory Commission, come together and begin a several days long continuous session of closed meetings. Their discussions are, as required by law, recorded, and a couple of weeks later a Congressman obtains the transcripts of these meetings by threatening subpoena. In this way the transcripts come to reach the general public. The following dramatisation of the meetings is based on excerpts from these transcripts.

SCENE : NRC Headquarters, 1717 H St NW
Washington DC

Director : Start.....

NARRATOR :
This is how the dramatic Friday began.

Scene 1
9. 30 am

MS SHUTTLEWORTH :
Hello !

FOUCHARD

Hello... good morning... Fouchard here. We have a deteriorating situation up there. The Governor in Harrisburg wants us to confirm what he's heard, that they've had an uncontrolled release of stuff of something like 1 200 millirems per hour. They're planning to...

MS SHUTTLEWORTH

You know we're taping everything..... OK ?

FOUCHARD

Yes, that's OK. We've just started banging this up to the White House Situation Room, and the Congress ought to be informed too. You can do that.

MS SHUTTLEWORTH

We'll take care of it..... Good morning.

Enter Denton

DENTON

Hi !

HENDRIE

Hi Harold. How are things at the plant ?

Enter Hendrie



Harold Denton, Directeur de la NRC

DENTON

It's really hard to get any data. They released some gases this morning before anybody knew anything about it, but I think they've stopped now. It carried on about an hour, one and a half hours. We recommended that people start evacuating, told the state police to evacuate up to five miles round the reactor. But I don't know what's happened.

FOUCHARD (on telephone)

The Governor has to authorise that, and he's waiting for a recommendation from us.

DENTON

There are people living near the plant in a northeast direction, but the plume has already passed by now.

Enter Gilinsky

GILINSKY

What's the wind speed ?

DENTON

We're trying to establish that

GILINSKY

And when did this plume..... When was the puff released?

DENTON

Within the last couple of hours

GILINSKY

Within the last couple of hours ?

HENDRIE

Presumably it's just terminated then

DENTON

We don't know for sure, but it was a continuous release for over a period of an hour and a half, which is kind of a lot of puff

GILINSKY

So even with a modest wind...

HENDRIE

A couple of knot wind and the damned thing has already passed the five-mile line... not much one can do in that situation

AHEARNE

Do they have direct radio contact with the helicopters ?

DENTON

Probably... I think the important thing for evacuation to get ahead of the plume is to get a start rather than sitting here waiting to decide. Even if we can't minimise the individual dose, there might be a chance to limit the population dose.

BRADFORD

I think you ought to make it clear that you're not talking about lethal doses.

HENDRIE

In which direction did you recommend evacuation, north-east ?

DENTON

Yeah... But it's a very light wind... do you have a match?... We have to look harder to find out which area is concerned. The people at the site should know best, but we can't get any information. The Chairman here should talk to the company... We

Enter Ahearne and Bradford

ought to get this sort of information before the event, but we don't have that sort of contact at the moment.

GILINSKY

We must get better data...

FOUCHARD

The Governor's waiting to get some information, and Chairman Hendrie, I think you ought to ring Governor Thornburgh and tell him what we know.

DENTON

I sure wish we had better data...

FOUCHARD

Don't you think as a precautionary measure there should be some evacuation ?



Joseph M. Hendrie, Président de la NRC

HENDRIE

Probably, but I must say, it is operating totally in the blind, and I can't judge the consequences. I don't have any confidence at all that if we order an evacuation of people from an area where they have already gotten a piece of the dose to one where it'll be less, or if we'll be moving them to an area where they'll get more than if they hadn't moved.

FOUCHARD Mr Chairman, I don't think... is there anyone who doesn't think we should tell the Governor what to do ?

DENTON

On the basis of what we know, it's a good beginning

HENDRIE

To start evacuating ?

DENTON

I think you and the other Commissioners should call the Governor..... I would still recommend an evacuation in front of and under the plume.

Scene 2
10.00 am

MS SHUTTLEWORTH
You're through to Governor Thornburgh.

THORNBURGH
Chairman Hendrie ?

HENDRIE
Glad to get in touch with you at last, Governor. I'm here with the Commissioners. I must say that the state of our information is not much better than I understand yours is. It appears desirable to suggest to people living up to 5 miles from the reactor in a north-east direction to stay indoors for the next half hour.



Dick Thornburg, Gouverneur de la Pennsylvanie

THORNBURGH
So your immediate recommendation would be for people to stay indoors ?

HENDRIE
Yeah, something like that, in a north-east direction.

THORNBURGH
How far ?

HENDRIE
Up to five miles... just a minute, we're getting some information from the Response Center. Can you wait while I see what they have ?

THORNBURGH
Sure

HENDRIE
We have a few numbers again, and it looks like we've fallen behind the event. The radioactive dose is getting smaller, and the emission was an hour ago. But I still think people should stay indoors now in the morning

THORNBURGH
That evacuation order at 9.15... was it an order, a recommendation, a misunderstanding... I have to know

HENDRIE (Aside)
Did Harold check with Collins ?
(to the Governor)
I can't answer you on that one. I can check, but I can't tell you, I don't know

THORNBURGH

It would be good to know, as if we get any more recommendations we have to know what the grounds for them are.

HENDRIE

Do you have the precise time of the release ?

HENDRIE

We heard about it at 6.40 am and it carried on about an hour, one and a half hours

THORNBURGH

From about 6.40...

HENDRIE

To about 8.30... something like that

THORNBURGH

Do we have any assurances that there won't be any more such releases ?

HENDRIE

No, and that's a very important aspect I want to talk to you about. As far as I can judge from the information coming from the plant, it is not clear that they won't get into this kind of situation again. I trust not again without all of us knowing in advance and being ready to anticipate what we may have to do. But we may very well get there again I think.

THORNBURGH

But you still don't think we ought to evacuate, just on the event that we have more bursts ?

HENDRIE

I think we ought to wait and see if there are going to be any more releases, and then go ahead and make a precautionary evacuation.

BRADFORD

Another way to put it to make him feel better.

THORNBURGH

I guess that's all for now.

NEWSCASTER

The Governor has ordered everyone living within a 10 mile area from the reactor to remain indoors this morning, to shut all windows and to turn off their air-conditioning. The island itself has been

declared an emergency zone.

The national guard, the civil defence authorities and the fire brigade in York, Dauphin, Lancaster and Cumberland counties have been put on short-term alert, and volunteers have been called in. Up to a million people live in the area.

Scene 3

10.17 am ; Enter Kennedy

KENNEDY

I think we should get in touch with the White House and tell them what we know

HENDRIE

We're having difficulties in establishing direct contact with the plant, and that is precisely what we haven't been able to do for 24 plus hours.

MS SHUTTLEWORTH

Fouchard and Denton are on the line from Bethesda. I'll switch them to the speaker telephone.

HENDRIE

Harold, I've spoken to the Governor, and we recommended that he consider suggesting to people to stay indoors for about half an hour, till the information improves a bit... if we knew then what we know now would we still have recommended people to evacuate at 9.15 ?

FOUCHARD

There's been a lot of discussion about that in the past 10 minutes, seeing as we don't know if there's going to be a new release or not, and if so, when.

HENDRIE

Apart from that I'm trying to get some information for the Governor

FOUCHARD

Yes, he's obviously...

HENDRIE

Let me put it to you like this the plume becomes less dangerous as it spreads out and reaches the ground... would you still have recommended evacuation, do you think ?

BRADFORD

It has a lot to do with whether they had stopped the release.

HENDRIE

Did you guys know, when you recommended evacuation, that they'd already stopped the release ? Do you know when they stopped it ? When did we get to know ?

DENTON

It began at about 8 o'clock, and carried on for an hour, an hour and a half

AHEARNE

Harold, do you think there are going to be any more releases ?

DENTON

People have told me about three hours...

HENDRIE

Yeah

AHEARNE

Do you think they're going to have to release again ?

DENTON

Ah... they're trying to rig up a system to pass the stuff to new tanks without releasing any to the atmosphere. They're trying somehow.

AHEARNE

But that's only got what, a 4-inch pipe ? That's your only link ?

HENDRIE

OK, work on it. But we want to know long enough in advance so we can call the Governor and recommend some protective measures for precautionary evacuation and so on, on the direction the wind is blowing for some reasonable distance. We need an hour or more notice, if possible, but it may be difficult.

Exit Hendrie

FOUCHARD

So we tell the media there was an uncontrolled release of radioactive material earlier today. Duration of the release appears to have been stopped. The Chairman has talked with the Governor and recommended that he direct people to stay indoors for the present time.

AHEARNE

Up to a distance of about five miles

FOUCHARD

Is that accurate, Mr Chairman ?

AHEARNE

Mr Chairman is not here, but that's accurate. Those of us who are here say that's accurate.

FOUCHARD

It appears the release has stopped.

KENNEDY

Appears ? Don't we know it has ?

FOUCHARD

The power company says it's stopped.

NARRATOR

Met Ed's Chief of Operations, John Herbein, holds a press conference at 11 o'clock.

"Conditions in the reactor are stable," he says.

During the press conference he admits that the power company released radioactive steam for a period of 45 minutes between 7.30 and 8.15.

"The steam was more radioactive than we expected," he says, *"But there is no need for panic."*

Scene 4
11.03 am

HENDRIE

Harold, this is the Chairman again. The President just called over, I think you had better go down to the site. He'd like to see a senior officer there, and I think you are it

DENTON

What ? We got a squeal the moment you started.

HENDRIE

OK, I have talked to the President and I think you ought to go down to the site. He will be sending down, immediately, a sort of communications system that he takes with him when he travels. He wants to be in a position to pick up the telephone and go right through to the site, and be able to talk to his man down there for information and recommendations on what to do. We will also be able to patch into that, from here to the White House operator, so maybe our communications with the site will improve. Get a group together and go there. We'll organise transportation from here.

DENTON

That sounds good.

NARRATOR

At 11.15, air-raid sirens start wailing in Harrisburg, apparently the work of an Employee in the Department of environmental resources trying to reinforce Thornburgh's warning to people to stay indoors. A TV technician in Middletown tells his colleagues that :

"People in Harrisburg are running around like crazy Middletown's overloaded telephone system goes dead."

Governor Thornburgh arranges a press conference for 12.30.

THORNBURGH

Based on the advice of the Chairman of the Nuclear Regulatory Commission, and in the interests of taking every precaution, we've advised those who may be particularly susceptible to the effects of radiation, that is, pregnant women and pre-school age children, to leave the area within a 5 mile radius of the Three Mile Island facility.....

NEWSCASTER

Governor Thornburgh also ordered schools within a

ten-mile radius from Three Mile Island to be closed.....

Scene 5
12.40



Roger Mattson, Directeur de la division sûreté des réacteurs de la NRC

BRADFORD

Can you speak up Mattson? We're having trouble hearing you.

MATTSON

My best guess is that the core uncovered, stayed uncovered a long period of time..... We've just heard that there was something which could have been a hydrogen explosion inside the reactor already on the first day. For some reason we were never told about it until this morning. Now they have a hydrogen bubble up in the core, they've already tried all sorts of methods to get rid of it fast. This is a horse-race against time, and the question is, do we win the horse race, or do we lose it? If you're lucky, you win the horse race, if you're unlucky you lose. But if we try to get rid of the bubble knowing as little as we do now, we ought to be moving people, because I think you are going to lose the horse race.

HENDRIE

Maybe we ought to stay where we are. I don't want that bubble creeping down the core.

MATTSON

I've got to say it. I don't know why you're not moving people. I've been saying it down here. I don't know what we're protecting just now. I think we ought to be moving people.

KENNEDY

How far from the reactor ?

HENDRIE

How far ?

MATTSON

I might add, you aren't going to kill any people out to 10 miles....

KENNEDY

Ten miles... that's

BRADFORD

That's Harrisburg

MATTSON

We've got too little information too late unfortunately, and it's the way every partial core meltdown has gone. People haven't believed the instrumentation as they went along. It took us hours to convince them that those Goddamn temperature measurements meant something. At 4 o'clock this morning they finally realised what was going on.

FOUCHARD

Hello ! This is Fouchard... we've got to get something out to the press, a statement or a press release. We're working on it now. Is there anything you want to have said ?

HENDRIE

A press release ?...

FOUCHARD

A statement from the NRC is necessary.

HENDRIE

OK.....

Lunch ?

Scene 6

1.00 pm

GILINSKY

OK Mattson, just let me switch you to the speaker phone.

MATTSON

We are working hard at trying to understand what the condition of the core really is. This is a failure sequence which has never been tested, it's just unbelievable.

GILINSKY

Let me ask you something which we may have missed today. How long was the core uncovered, and when did it happen ?

MATTSON

We are guessing on the first four hours, roughly. But if we are guessing right, it may have been uncovered as long as 15 hours

GILINSKY

On the first day

MATTSON
Pardon me ?

GILINSKY"
On the first day ?

MATTSON
Yes



Victor Gilinsky, Commissaire à la NRC

GILINSKY
If we start considering one of the different ways to bring the reactor down, what happens then ?

MATTSON
Were I to do anything just now, I would be moving people as far away as possible

GILINSKY
And.....

MATTSON
I must say to you, I have been recommending move people for the past four hours

GILINSKY
OK, next question. What sort of evacuation plans are there, in other words, if someone decides to move right now, are there plans ?

MATTSON
I've heard that many have already moved, pregnant women and children have been moved

GILINSKY
Presumably the evacuation plans are state plans ?

MATTSON
Yes

GILINSKY
What is your principal concern right now ?

MATTSON
Well, my principal concern is that we have got an accident that we have never been designed to accomodate, and it's, in the best estimates, deteriorating slowly, and the most pessimistic estimate it is on the threshold of turning bad. And I don't have a reason for not moving people. I don't know what you are protecting by not moving people.

GILINSKY

Suppose we now choose one or another of these methods and it turns bad, what time-scales are involved ?

MATTSON

Hours

GILINSKY

Hours before what ?

MATTSON

Before you have a core melt

GILINSKY

Before you have a core melt ?

MATTSON

If you lost it and had a core melt, it's a question of hours before the core starts slumping, and you would go to things like WASH 1400 to see how long you had.

NARRATOR

The situation is critical now. People studying the evacuation zones around Three Mile Island find it impossible to get a clear idea of what areas would be affected. Even people in New York are concerned about the possible consequences of the radioactive releases from Three Mile Island.

WASH 1400, known as the Rasmussen Report, is a probability study of the possible consequences of various types of reactor accidents. The NRC Commissioners turn to it in order to get an idea of the times involved in an evacuation.

Scene 7
2.00 pm

COLLINS

As regards evacuation plans in the area, such do exist, although they've never been tested. But they think they can be used. They're confident that they'll work if they're needed.

GILINSKY

How much time would we need ?

COLLINS

We know how much time we'd need to evacuated an

area of up to 5 miles.....

COLLINS

We're talking about a larger area.

COLLINS

10 miles perhaps ? If you're talking about 10 miles, that means Harrisburg. You realise that ?

NARRATOR

At 2.00 pm on Friday the NRC's Harold Denton is flown to the reactor by helicopter.

The White House prepares to fly iodine pills into the area, and the Federal Emergency Agency sends 70 tons of lead bricks to the reactor - these are to protect the workers from the radioactivity in the plant.

Scene 8

2.45 pm

HENDRIE

We discussed this in the White House Situation Room, and I outlined the situation, the releases, and so on. The Federal Disaster Assistance Agency is sending some folks down to the Governor. Harold is keeping in touch with the White House.

AHEARNE

Good..... What's the situation with the hearings in Congress ?

MS SHUTTLEWORTH

Senator Schweiker and Senator Kennedy are tomorrow morning.

Scene 9

3.15 pm

MS SHUTTLEWORTH

Harold Denton's on the line.

DENTON

Hello ! Mr Chairman ?

HENDRIE

Hi

DENTON

Quite an experience

HENDRIE

Yeah, I didn't tell you about this when I mad'e you Director of that office, Harold, I thought I'd tell you later this summer actually. How's it going ?

DENTON

I think it's going alright. The communications are lousy, they've spent an hour just to open this line

HENDRIE

Can you move closer to the speaker ?

DENTON

I've been briefed in general, and I can pass that down to you.

HENDRIE

Allright

DENTON

The situation is stable. I don't see any immediate threats. Our people are out there trying to get a grip on things. I've made up four task forces, they're analysing what would happen during a meltdown and so on.

HENDRIE

The central question now is evacuation. We've advised the Governor to tell people to stay indoors half an hour or so, and that preschool children and pregnant women stay out of the area for a while.

DENTON

They seem to be reasonable precautions

Scene 10
3.30 pm

HENDRIE

Dick, I thought I'd brief you on what's been going on since we spoke this morning. Our people have come to the conclusion that we have a more severely damaged core than we thought earlier. The core is much more damaged than we thought last night. We've sent our Director of Reactor Regulations to the site. His name's Harold Denton. Can you hear me ? The White House has provided us with some communications equipment so that's getting into pretty good shape now. I've asked Denton to give you a call so that you can speak to him directly.

THORNBURGH

Can we try you on a couple of questions, Joe ?

HENDRIE

Shoot

THORNBURGH

Can you hear me ?

HENDRIE

No, if there was a question there I'm afraid I missed it completely. Sorry.

THORNBURGH

Can you give us an idea of what precautions we should be taking in case the worst happens ?

HAROLD

Have your emergency and evacuation plan people on the alert

THORNBURGH

How large an area would be involved when we talk about evacuation, a thorough evacuation

HENDRIE

We ought to be talking in terms of 20 miles

THORNBURGH

Is there anyone in the country who has experience with the health consequences of such a release ?

HENDRIE

Ah... not in the sense that it's been studied and understood in any real way. There were back in the days when they were doing bomb testing, they managed to give groups of soldiers and occasionally a few civilians doses in the low rem ranges a subject

of discussion these days, but that's about the only comparable experience that occurs to me. You are talking now about a major release, not about the small releases that have occurred thus far.

THORNBURGH

What about continued low-level emissions ? Are they to be concerned about ?

HENDRIE

If they carry on for a few weeks, it would be prudent to move people.

THORNBURGH

What is your opinion on the chance of a meltdown ?

HENDRIE

Pretty small, I think

THORNBURGH

What are the chances of a large unplanned release ?

HENDRIE

The chances of that are larger than the chances of a meltdown. You don't have to have a melt, You can have large releases of radioactivity without that happening.

There are quite a lot of gaseous fission products. If the chances of a meltdown are 1 percent, the chances of a large release are 5 percent, somewhat higher.

THORNBURGH

Have there been any more unplanned bursts of activity ?

HENDRIE

Not that I know of. But the people at the plant have different views on the controlled and uncontrolled aspects. They knew it was going to happen when it happened... but if you need any more information, get in touch with Denton... he's down there, he can tell you all there is to tell.

THORNBURGH

Thank you very much

HENDRIE

OK

THORNBURGH

Did the power company inform you about the puff

this morning?

HENDRIE

No, we weren't told about it.

THORNBURGH

OK, thank you very much

HENDRIE

Fine. Call again if I can help you further.

THORNBURGH

Sure. Thank you.

NEWSCASTER

We're just getting in an alarming telegram from UPI about the accident in Harrisburg.....

Federal officials said Friday a "meltdown" - the worst possible nuclear power plant catastrophe could occur at the Three Mile Island plant in a few days if engineers cannot cool down the crippled reactor.

We are now getting in the rest of the telegram.....

Dudley Thompson, a senior official in the NRC office of Inspection, said the threat is posed by a steam bubble inside the reactor that could increase in size as pressures inside the reactor are lowered, leaving the core without vital cooling water.

"We are faced with a decision within a few days, rather than hours" Thompson told reporters at an NRC news center.

"We face the ultimate risk of a meltdown" depending on "the manner we cope with the problem. If there is even a small chance of melt-down, we will recommend precautionary evacuations."

Thompson said there is no risk of a nuclear explosion, but he said under some circumstances there could be a "metal-water reaction" - an explosion of steam caused by the cooling water hitting the super-heated uranium fuel rods.

Scene 11
4.30 pm

HENDRIE

There's going to be a tape of Harold down at Three Mile Island, and a tape of the dumb Chairman answering the same questions differently, and they'll pick out the divergencies even though they may not be matters of substance... and here you are, taping every word I say...

Thompson's made a statement which is a little too expansive to be happy with in this kind of situation. You know what he said was that it could happen, or something like that... Jesus Christ !

UPI has summarised what he said, and quotes him as saying that there's a chance of there being a meltdown in a few days. That's why that journalist from Pennsylvania just rang.

GILINSKY

Well, I guess I know what I want to do with her...

HENDRIE

You know she asked, can you guarantee this, can you guarantee that. No, you can't guarantee anything.

BRADFORD

I don't know.

NARRATOR

Harold Denton tells reporters at the nuclear plant that he and his experts are going to look into the details of what has happened at Three Mile Island. He tells them that he will hold a press conference at 8.30 that night. He then calls Joseph Hendrie at NRC headquarters.

Scene 12
5.00 pm

DENTON
Hello, Mr Chairman?

HENDRIE
Hi

DENTON
I understand the guys' problem now. Christ, all I've done is get on the phone.

HENDRIE
Yeah

DENTON
The Governor's office rings every few minutes

HENDRIE
Yeah... what did you say ?

DENTON
The Governor's office has been ringing every few minutes... and the first question they hit me with was if we were worried about a melt-down.

HENDRIE
Oh for Christ's sake... I know.

DENTON
I gave him my view that there was no immediate hazard, and that there were ways of cooling the core with minimum risk to the public, that I had my staff poring all over this, and that I intended to meet with him later this evening and the Governor and I are going to hold a joint press conference sometime after seven - after I brief him.

HENDRIE
What have you told the press so far ?

DENTON
That you'd called the President and that he was very interested in getting hard information from the site - that my job was to keep you informed, and the President informed. I told them I thought the Governor's action reasonable regarding precautions to stay inside. Then they asked a lot of other questions, most of which I didn't answer.

HENDRIE
It was quite a small group, but they were pretty persistent. They needed information, so I'm sure that

tonight in Harrisburg it's going to be a mob-scene.

HENDRIE

Yes, I'm afraid so.

DENTON

They also mentioned the bubble and they wanted to know what all that meant, so I gave them a five minutes' briefing.

HENDRIE

Steam bubble ?

DENTON

The bubble in the core. Not condensable.

HENDRIE

The bubble in the head ?

DENTON

In the head of the vessel. I told them the core was covered, but that it's pretty hot in some parts.

HENDRIE

I think Fouchard will have to ring Jody Powell and tell him how these public information sessions are developing.

DENTON

We've just spoken to Jody and he was pretty worried he'd received lots of calls from Congress about this talk of a meltdown. I told him what I'd said and he seemed satisfied. Were you at the press briefing earlier ?

HENDRIE

No

DENTON

I heard it was Dudley Thompson and a few others.

HENDRIE

Yeah, Thompson and Brian, and Thompson got off and wandering about the gas bubble and the possibility that it could expand down into the core and so on.

DENTON

We heard about that already at 9 o'clock. OK, I'll get in touch with you later.

HENDRIE
We look forward to it.

DENTON
OK

HENDRIE
OK, thanks Harold.

NARRATOR
At the same time as helicopters are flying over Three Mile Island measuring radiation, and as Harold Denton and his staff try to get to grips with the bubble problem, NRC headquarters concentrate on trying to parry the information given out by the media.

Scene 13
6.00 pm

HENDRIE
We start like this and say that, contrary to media reports, the Chairman of the Nuclear Regulatory Commission said on Friday that there is no imminent risk of a meltdown at the nuclear powerplant at Three Mile Island. Period.

KENNEDY
Excellent. Then I'd carry on like this.....

HENDRIE
Then we carry on as it's written here... up to "*the reactor is stable.*"

KENNEDY
Then we can add...

HENDRIE
Then we can add... The Commission's experts, under the leadership of...

KENNEDY
The chief of...

HENDRIE
The experts flew down to the plant early this afternoon.

AHEARNE
The problem is obviously with the core

KENNEDY

We've said that. We've said that there is evidence that the core has been severely damaged, and that several ways of bringing the plant down are being considered

AHEARNE

The whole flavour is optimistic

KENNEDY

It isn't optimistic. It quite simply says that we're working hard on it, which we are. The main thing is to make it clear to people that we're working on the problem.

AHEARNE

Look, we've been sitting here I don't know how long and said that everything's OK. It isn't, we're having to struggle to work out what to do, and that doesn't come out in this

KENNEDY

I know what you mean, but I'm worried about the consequences we may get.

FOUCHARD

Hello, this Fouchard

HENDRIE

Yeah, hi Joe

FOUCHARD

We must know what Denton's last briefing was about. We need to know that

HENDRIE

Harold's going to meet with the Governor later and they're planning to hold a press conference at 7 o'clock. We were going to hold simultaneous press conferences here and there, but we decided against it. Now we're trying to handle those media reports based on a UPI telegram about an imminent meltdown, and we're engineering a press release to say that there is no immediate risk.

FOUCHARD

Yes, I spoke to the White House Situation about that and told them that our man was misquoted

HENDRIE

What kind of off-site readings are you getting in the

last round ?

FOUCHARD

Just a minute... hold on... three millirems at most, not a great difference

HENDRIE

OK, very good, thanks

FOUCHARD

Alrighty

KENNEDY

Three, that sound good

HENDRIE

Put in that sentence

KENNEDY

Which sentence ?

MS SHUTTLEWORTH

There's a man from "*Meet the Press*" on the line saying Jody Powell said there was going to be press briefing.

HENDRIE

A press-release.

MS SHUTTLEWORTH

A press-release, OK, thanks.

KENNEDY

Listen to this : "*In the unlikely event that this were to occur, some of the fuel will fail to cool and further damage to that fuel could occur.*" How's that ?

HENDRIE

That's perfect... we have the latest figures, I think we should put that sentence in.

KENNEDY

We put it in a few minutes ago. I think its a fine press release... it gives the right sense of actual facts without being alarming...

NEWSCASTER

The Chairman of the Nuclear Regulatory Commission Joseph M. Hendrie said this afternoon that there is no imminent danger of a core melt at the Three Mile Island Nuclear Plant.

There is evidence of severe damage to the nuclear fuel. Samples of primary coolant containing high levels of radioiodine and instruments in the core indicate high fuel temperatures in some of the fuel bundles, and the presence of a large bubble of non-condensable gases in the reactor vessel.

Because of these non-condensable gases, the possibility exists of interrupting primary coolant flow within the reactor should the pressures be further decreased and the contained gases allowed to expand. In the unlikely event that this were to occur some of the fuel would fail to cool and further damage to that fuel could occur. Several options to reach a final safe state for the fuel are under consideration. In the meantime, the reactor is being maintained in a stable condition.

Scene 14
7.00 pm

KENNEDY

Two minutes to go

HENDRIE

You know, they're hysterical now

KENNEDY

I bet they are

HENDRIE

The press conference was postponed you know, by an hour

KENNEDY

Tough. Well, the life of a newsman. That's why they drink so much. They are always losing their stories just before they file them. That's why they never appear at briefings. They have a lottery every day at 3.00 to see who gets to go to the briefings. All the rest go to the bar. The one guy goes and files for everybody and joins the others at the bar, and they pay for his drink.

HENDRIE

Harold's half an hour late

KENNEDY

This is the lead story for all the networks succeeded only by the ship that is burning in St Thomas, where people are really getting hurt

HENDRIE

There's a ship burning in St Thomas ?

KENNEDY

A cruise ship

HENDRIE

Holy Mackerel, I was thinking about taking a cruise this winter, when I decided I wasn't going to ski. Good thing that never got off, isn't it ?

KENNEDY

By ship nothing is riskless

NARRATOR

Harold Denton's press conference which had been planned for 8.30 is postponed three times and does not take place until around 10.00.

PRESS CONFERENCE 30/3/1979

REPORTER

..... they're going to go on decayingthey're going to go on producing.....

DENTON

The bubble is growing not because of gas in the fuel assemblies, but because of hydrolysis of the water. It's generating hydrogen and oxygen....

31/3/1979

WHP RADIO

Jingle

REPORTER

Who's providing you with this information ? Met Ed again ?

CRITCHLOW
The Chairman of the Nuclear Regulatory
Commission is providing us with this information

REPORTER
My question is, you said somebody told you they
don't think this is going to happen again... Is that
Hendrie who's saying that, 300 miles away ?

CRITCHLOW
Hendrie... ah... he-he... hmm... yes.

NARRATOR
The five men of the Nuclear Regulatory
Commission in Washington continue their closed
session into Saturday.

The meeting begins with a discussion on how to
tackle the media after the events of the dramatic
Friday.

Scene 15
10.35 am

HENDRIE
One of has the responsibility to go on television and
explain about the radiation from the emissions, and
make it crystal clear

BRADFORD
And you think I'm the one to do it

AHEARNE
Yes

HENDRIE
You have that talent for neat expression that you
need

BRADFORD
I have the advantage of knowing little enough
about it to say what I do know relatively briefly.
Denton's problem was that he took more time than
he needed

HENDRIE
The same thing happened to me the other day at that
hearing in Congress. Someone asked, is there
anything you know that you haven't told us ? And I
answered, I've told you more than I know

MS SHUTTLEWORTH

They rang from Bethesda today, they're anxious to get you out in front of the press. They say it would have a calming effect... just turn up and show who you are...

HENDRIE

It generally leads to dismay... shall we all go to Bethesda and hold a press-conference ?

KENNEDY

No, I don't think so

HENDRIE

If you want to come, you're more than welcome.

AHEARNE

In this situation getting a clear message is much more important than the number of persons

NARRATOR

A conflict has developed between the Nuclear Regulatory Commission and the power company, Metropolitan Edison. Confidence in the company has ebbed out completely, and the White House directs the NRC's man at the site, Harold Denton, to take charge. At 11 o'clock Met Ed holds its last press conference, and John Herbein tells reporters, *"I personally think the crisis is over."*

Harold Denton holds his press conference at 12.00, and contradicts the company. *"The crisis isn't over until we've cooled the reactor down"* he says. *"The hydrogen gas in the bubble is increasing, and so is the risk of a hydrogen explosion."*

Herbein later admits that the crisis is not over.

Scene 16

11.15 am

GILINSKY

Where do we stand now on this question of whether to move people or not ? Even if the situation is better today, maybe we ought to think in terms of telling people who live closest to the reactor that maybe... if they've got relatives 20 miles away, if they don't have to be around now, to go visit them...

You know, I'm sort of thinking, if I had a friend in Harrisburg, guess I'd... I don't think I'd tell him to move, I'd tell him to keep close to his radio, something ... If you had somebody really close, you might tell him, if he didn't have to stick around, why maybe he oughtn't to be there.

HENDRIE

Let me give you a loose sketch of a meltdown, when the core starts melting and working its way out of the reactor vessel... it comes into contact with the water at the bottom of the containment. You can't absolutely rule out a steam explosion, but a more likely course is that it settles down on the containment floor. It doesn't necessarily burn its way down to that thick concrete mat. What happens with a hot melt on concrete is that you get spalling and the concrete breaks up, some of it liquefies, floats up as slag, and you get a substantial amount of carbon dioxide out of it. You get a lot of gas developing in the containment, the pressure goes up and eventually you come to a point where you either vent the containment... you've got your choice then, then, you can either vent the containment or you can let it go on up past the design pressure... why you'll blow something out.

But it takes several hours

GILINSKY

So you're adding that time...

HENDRIE

Yeah, keeping in mind that you cannot exclude a steam explosion which would lead to a containment leak someplace.

GILINSKY

Suppose we look at the beginning of this sequence. Suppose you lose the pumps on your cooling, and you don't call an evacuation at that point, it seems to me you'd be rushing people in to try and fix the damage, and then you're loosing time.

HENDRIE

Not that much

KENNEDY

My question goes to precisely that... when you're rushing around and trying to start up pumps and switching lines, it's like you're saying

"Let's all go out there to see if we can win the ballgame." But by that point you've reached the end game as far as the population is concerned. You really ought to get them out of there because you have good reason to believe that it's not going to work.

GILINSKY

Yeah, but...

KENNEDY

You're talking about two different groups of people now. On the one hand you have the people inside the plant, and there you're right, but on the other you have the population outside the plant, and that's another matter.

GILINSKY

You raise an interesting point. Does Denton have a plan for evacuating people at the same time as he's throwing people in to fix the plant ... is that what you mean ?

KENNEDY

Yes, even as you're evacuating you're trying to save the reactor, you're trying to stop it.

GILINSKY

Has that been made clear beforehand, or is it something which will be tackled when it happens ? Is anyone going to try and get in touch with Harold. People are going to be making decisions, they'll even be calling back here trying to decide what to do. And what also concerns me is that then you'll be talking about an emergency evacuation, with all its overtones and problems.....

AHEARNE

WASH 1400 has a PWR accident sequence, meltdown and steam explosion. And they mention a one hour warning time for evacuation, and 2.5 hours for the time of release.

KENNEDY

That's 3.5 hours

AHEARNE

How similar is that to our situation ?

KENNEDY

About the same, 210 minutes

BRADFORD

Is that the one where they mention a large pipebreak ?

GILINSKY

I hope they didn't only look at that one.

HENDRIE

This situation is more fragmented, we don't have a completely overheated core... one chunk goes, then an other chunk, and so on

GILINSKY

It hasn't been going so long, you start with a cooler

BRADFORD

Can you say with confidence at this point that you haven't got an explosive oxygen-hydrogen mixture in the reactor and...

HENDRIE

In the bubble ?... We don't know what the hydrogen situation is just now, the information hasn't come in. I rang them a while ago, and they're still working it out.

BRADFORD

Is it likely that we get a sequence which gives us less than six hours, or whatever time we need to move people ?

HENDRIE

Not a very large possibility, but you can't rule it out.

KENNEDY

And what would the nature of such a sequence be ?

HENDRIE

A hydrogen explosion in the vessel.

KENNEDY

In the vessel ?

HENDRIE

Yes

GILINSKY
Shooting the top off...

HENDRIE
Breach. Breach

GILINSKY
... the vessel in some way ?

HENDRIE
Breach of the vessel

KENNEDY
Breach of the vessel and containment

HENDRIE
Yes

GILINSKY
What would that do to the containment if that went flying around?

HENDRIE
The roof is pretty strong, there's not much chance of getting a rocket flying out of it, but...

KENNEDY
Is it more likely to rupture or blow ?

HENDRIE
To rupture

KENNEDY
I see

HENDRIE
Yeah

KENNEDY
So that you're not going to have large missiles

HENDRIE
Well, you can't exclude the possibility of a containment breach

GILINSKY
Well, suppose it ruptures, what happens then ?

HENDRIE

You have a bang. The whole thing starts shaking and you have a bang. So if you don't get containment damage from projectiles flying around, there are two other causes for concern. The first is that the fuel can burn its way through, and the other is that you can get a second hydrogen-gas explosion which could breach the containment.

BRADFORD

So we have a situation which gives us a sequence of events which would give us less than six hours.

HENDRIE

Six to twelve hours

BRADFORD

I see

HENDRIE

Yeah, I think that's a fair statement

BRADFORD

I think that really ought to be told to the Governor, in clear terms.

HENDRIE

Hello, can you connect me to Three Mile Island?... I'll call Harold first.

Harold, this is the Chairman. We're waiting for your report, and we want to check with you. How's it going? Can you talk now?

BRADFORD

You have to tell him to call us

KENNEDY

Tell him to call us on the green phone

HENDRIE

Are you there? Who understands the electronics?

KENNEDY

They said yesterday that he isn't connected on the squawk box

BRADFORD

We'll have to call him on the other number

HENDRIE

Is there any way we can get through to you?

KENNEDY

Just dial... what's the number ? 395 2000

BRADFORD

Yeah

KENNEDY

Peggy, what's the number ?

MS SHUTTLEWORTH

395 2000

KENNEDY

That's right. Joe, just dial 395 2000

HENDRIE

OK. Tell the White House operator to connect us !

NARRATOR

The tension is high now. President Carter has daily conversations with Hendrie and Harold Denton, conversations which have not been recorded. The White House is striving to reduce the concern which has now spread all over the USA.

Scene 17

12.000 noon

DENTON

I think we're making some progresse The bubble is going another way, and I think it's going in the right direction. The temperatures in the core are better than they were yesterday. The vibrations in the pumps are getting stronger, but we're taking a look at that. Radiation levels in the control room are lower, so the operators don't need gas-masks any longer, whith makes everything a lot easier. But we're thin on folks from the company. We can't use the two radiation protection teams any longer as they've both been contaminated. The operators have underestimated the problem. They're not paying enough attention.

HENDRIE

I've got two problems to consider. The first is, are we sufficiently close to a situation where we ought to be considering organised evacuation ? The other is, if we let the bubble move from the vessel into the containment, we could be getting flammable.

DENTON

Yeah, you've further strengthened my concern. I must have more people, I must have more help, if I'm to be able to solve these problems quickly.

HENDRIE

Yes, that would be helpful

VOICE

This is the White House operator. The President has requested to talk to Harold Denton.

HENDRIE

Gee, I guess I ought to turn the speaker off.

GILINSKY

Unless you want to listen to the President.

HENDRIE

No.

NARRATOR

The chairman of the NRC, Joseph M. Hendrie holds a press-conference outside the NRC Operations Center in Bethesda.

NEWCASTER

UPI has reported that Joseph M. Hendrie, chairman of the NRC and America's top nuclear expert, said on Saturday that if the bubble cannot be eliminated, it might be "prudent" to evacuate the entire population of an area up to 20 miles from the plant. Thousands of residents around the crippled nuclear plant voluntarily, others stubbornly remained many with their bags packed - awaiting a possible evacuation order.

Scene 18
3.15 pm

MATTSON

Let me outline the situation as frankly as I know how. Bringing this plant down is risky. There's not negligible risk in bringing this plant down. No plant has ever been in this condition, no plant has ever been tested in this condition, no plant has ever been analysed in this condition in the history of the reactor programme ...

GILINSKY

Allright

KENNEDY

It says here you ought to be prepared to be making decisions

MATTSON

That's right.

Well, you don't want to rush that, but you don't want to be sitting here with your arms folded either

MATTSON

That's right.

KENNEDY

That's what you're saying, isn't it ?

MATTSON

And I don't think we can wait two weeks

KENNEDY

I understand

MATTSON

And it ought to be done in a couple of days

KENNEDY

A couple of days ; because of this pressure...

MATTSON

No, there is just time to do it in a couple of days. You're generating more oxygen, you're generating more hydrogen, your pump is running in a condition it doesn't like to run in. You've got three pumps running, you need four. You've got radiation in that containment, where you have important instruments which you're relying on and which are radiation-proof... but... are you asking me for recommendation ?

GILINSKY

No, no... well, if you have one, yes.

MATTSON

I think I'd change my recommendation on evacuation today. When I made that recommendation two days ago it was because they were releasing large amounts of radioactivity unfiltered through the stacks, with no apparent way of stopping it. I wasn't sure the reactor was under control, so I said "*move them.*" I had no choice. Almost an hour away from a core-melt, what else could I say ?

GILINSKY

And the situation is better today ?

MATTSON

Yes, it is. The best you can do now is to alert people.

AHEARNE

You know, they're certainly alerted.

GILINSKY

The whole world is alerted.

NEWSCASTER

Federal officials said on Saturday that the gas bubble inside the crippled nuclear reactor at Three Mile Island is showing signs of becoming potentially explosive, complicating the decisions on whether to mount risky operations to remove the gas. Officials said earlier that tens of thousands of people might have to be evacuated if engineers decided to try to remove the bubble, operations that could risk a meltdown of the reactor and the release of highly radioactive material into the atmosphere.

But the Nuclear Regulatory commission said saturday night that it might be equally risky not to try the operation, because the bubble showed signs of gradually turning into a potentially explosive mixture that could wreck the already damaged reactor.

(Read in several languages in the background)

Scene 19
4.20 pm

HENDRIE

The situation is improving, the need for evacuation has diminished even though it still exists. I guess if you had asked me yesterday there would have been an 80 percent chance that I would have voted for evacuation in the direction of the wind. I think. it's a little lower today, but it's still higher than 50 percent. Now the papers are saying that I've said that we're going to evacuate everybody out to 10 or 20 miles. Jesus-Christ, what I said was what I'd told the Governor and the whole schmear.

KENNEDY

Yeah

Oh boy, tell them that this exceeds my normal standard of living.

DORIE

Mr Chairman, you must admit that that's what you were considering

KENNEDY

You did mention 10 - 20 miles

DORIE

Yes, he did

HENDRIE

You know, the press people play this game. They call up the state Emergency Planning Office, and say "*The Chairman of the NRC just said you've got to evacuate. What do you think of that ?*" Now they have a problem with the press.

MATTSON

I know how it feels

HENDRIE

Which amendment guarantees freedom of the press ? Well, I'm against it.

NARRATOR

At 9 o'clock that evening, Governor Thornburgh's press secretary tries to calm frightened reporters

CRITCHLOW

... And about 25 or 30 reporters burst in through the doors of my office... burst right into this office, and said, *"What the hell's going on ? We want to know if we have to get out of here !"*

NARRATOR

They are suddenly frightened for their lives, and totally uninterested in covering a story. AP sends gas-masks and protective clothing down to the site.

On Saturday night President Carter, who is concerned over all the commotion, holds a press-conference in Milwaukee.

NEWSCASTER

Carter said,
As you are aware, we have a serious problem at one of our nuclear installations in Pennsylvania. I have just spoken with experts at the site, and they assure me the situation is stable and improving. But the people in the area are very concerned and the crisis is not yet over. In the near future I shall be travelling to Three Mile Island in order to gather information on the spot.

1/4/1979

NARRATOR

On Sunday morning Chairman Hendrie flies down to join Harold Denton and Roger Mattson, so as to meet the President with them.

Eager residents gather on the streets of Middletown so as to catch a glimpse of the President.

Back at NRC headquarters, scientists work feverishly, trying to calculate the exact consequences of a meltdown, the time-scales involved, and so on...

Scene 20
12.00 noon

KENNEDY
Coolant water stops, the core and the water heat up. Time, 100 minutes. The core is uncovered, time 150 minutes. The core begins to melt, 200 minutes. Meltdown. That's right, you're right. The core starts melting already after 3.5 hours.

AHEARNE
Three hours and 20 minutes.

KENNEDY
Which leads to...

GILINSKY
Which

KENNEDY
... meltdown

GILINSKY
The reactor starts going towards a meltdown, or something like that. We'll write that up here.

KENNEDY
I think that'll be good.

GILINSKY
I want a version of this that can be turned over to people who don't know a thing about it.

KENNEDY
Look at this

GILINSKY
Yeah

KENNEDY
It's pretty clear

GILINSKY
Now let's turn to the evacuation aspect. If something happens there, for some reason somebody evacuated the control room, which I think is what happens, what then? When those guys know it's a meltdown, do they stay?

KENNEDY
They stay a while, until the radiation gets too high. That's right isn't it? They can go to the other...

GILINSKY

To the other.... ?

KENNEDY

Another control room with less capacity, but which has the essential equipment

GILINSKY

What do you think of this ?

KENNEDY

And this...

GILINSKY

Do we have to pull the personnel out ? No, not yet.

KENNEDY

We can take the whole of that sentence out

BRADFORD

If we don't have any warning times, that's not a precautionary evacuation

KENNEDY

A rough analysis indicates that the pressure vessel would not rupture

BRADFORD

The Chairman thinks it would. That's one rough analysis against the other

KENNEDY

What worries me now are the emissions

BRADFORD

Sure but...

KENNEDY

... resulting from the event

BRADFORD

I'm assuming that any sort of hydrogen explosion in the reactor vessel would lead to evacuation

GILINSKY

Oh, hey, we're not doing anything for the plant

KENNEDY

No, nothing

GILINSKY

Let's do the same thing. Give me a blank sheet of

paper

KENNEDY
Like the one we had?

GILINSKY
Yes

KENNEDY
In the meantime, I'm going to check if the President is arriving at the site.

BRADFORD
It's a test of significance if the President's arrival is more important than the arrival of another percent of hydrogen

KENNEDY
I think it's more likely to have an increased level of carbon dioxide with the increased numbers of people.



Carter visiting the Control Room of Unit 2

NARRATOR
When the President lands at Harrisburg International Airport, the scientists at the site are still in disagreement as to the risks posed by the hydrogen bubble in the reactor. Most of them still believe that it could explode, some don't think so. Denton can merely brief the President on the uncertainty surrounding the state of the reactor. Carter tells the residents to have confidence in the Governor, and to do as he advises.

Three hours later, the scientists agree that for the time being there is no risk of a hydrogen explosion.

WHP NEWS
The White House says President Carter made his spur-of-the-moment trip to Middletown today to emphasise his concern for the situation at Three Mile Island.

Scene 21
2.15 pm

COLLINS

As regards evacuation, I spoke to the State Emergency man first, and asked him if they had sufficient transportation and other equipment to carry it out, and he said it depended on the scenario, on how large an area was involved. If it is a five-mile circle all around the plant, he said he has 99 percent of everything he needs, and he can carry it out. That's transportation and so on. But they're working on the worst possible accident. How does that look, I asked him, and he described this as an evacuation of a circle 10 - 20 miles out from the reactor.

BRADFORD

How much time did he give ?

COLLINS

He doesn't know. They've never tested an evacuation on such a scale. In the case of the smaller communities it would work, but the problem is with large metropolitan areas, like Harrisburg. The 10 mile circle goes right through the city. Then you would need considerably greater resources. We're working on that at the Federal Emergency Agency. Locally, you would need 4 hours' warning time.

BRADFORD

Four hours warning before evacuation. So that's 4 hours plus some number that I guess we don't know.

COLLINS

That's right. We need 4 hours. The State Police and the National Guard are on a 4 hour alert. The Governor doesn't want to shorten the time as he doesn't want to panic the people.

AHEARNE

Did a

ll evacuation plans cover 360 degrees?

COLLINS

No, that's only in a worst case situation.

AHEARNE

Of course

COLLINS

Another thing which cropped up was what to do with prisons, hospitals, children's homes, sick people

at home and so on. Our man at the site said they have plans for that. The impression I get is that this guy's on top of it, he seems confident, and you know, you can often tell by a person's voice whether they are not. He seems to think they can carry it out if they get Federal assistance.

AHEARNE

The longer time we have, the better we can advise the Governor

BRADFORD

When you're talking about evacuation in a situation which is not considered critical, are they talking about a 100 percent evacuation, or just 90 ?

COLLINS

When you talk about a general evacuation you exclude emergency personnel who have to stay until the very last. Some police have to remain in some areas. We know that when evacuations have been conducted in Florida for Hurricanes and things like that, there's always been one percent of the population that doesn't want to go, they hang on. And they've been killed. It's happened in Florida and in the Gulf states? And what do you do ? Do you drag them kicking and screaming out ?

KENNEDY

Surely there's a point where it's only the National Guard and the Police who are left simply to prevent looting.

BRADFORD

Which is one of the down sides of evacuation, I suppose, if somebody comes back into an area where the police have shoot to kill orders.

KENNEDY

They had that problem in Middletown

AHEARNE

I think the question we have to ask now is, whether or not we ought to order a precautionary evacuation.

KENNEDY

The answer is no, based on the facts we know. All this time we've seemed to be near a catastrophe it's turned out that the situation wasn't so critical, that it was something else

AHEARNE

My concern is that it's already past 4 o'clock. Soon it'll be dusk. If we intend to recommend an evacuation out to some distance, then we should do it now, rather than waiting until 7.00.

KENNEDY

I see the point of what you're saying, but didn't the Chairman say something about a big meeting, at what time ? 5.00 o'clock. He said 5.00.

BRADFORD

It would be good if he were told our judgement back here.

KENNEDY

If it wasn't for this meeting at five, would we be recommending evacuation ?

AHEARNE

No, but we could be advising the Governor to recommend evacuation

BRADFORD

Vic, as he went out, said something about five miles. I don't know, that he would at least give the advisory, I don't know whether he said evacuation. (On telephone) Can you try to get a hold of Gilinsky ? He's somewhere in the White House. OK.

AHEARNE

I think Joe Hendrie's office has the number.

BRADFORD

They've found the driver without finding Victor. They're looking.

KENNEDY

They've found the driver ? He doesn't know where Gilinsky is ?

BRADFORD

No, he left Victor at the main entrance.

2/4/1979

NARRATOR

The situation at the crippled power plant at Three Mile Island, Pennsylvania, lightened somewhat on Monday. A spokesman for the NRC said that the

hydrogen bubble had considerably decreased in size. The spokesman also said that the NRC has contacted the owners of seven other nuclear power plants with the same design, in order to prevent similar accidents happening in the future. All seven will be receiving visits from the NRC.

Scene 22
10.20 am
3/4/1979

AHEARNE

The other are just coming Denton. Can you go through that again ?

DENTON

There are too many people up in the control room now. We've just gotten a list of all the people up there. Jesus Christ, there are about 15 to 20 people standing there behind the operators. I think those who are best equipped to man the reactor are shift people who've already been there. Now we have to consider the advantages and the disadvantages of bringing the reactor down. There really isn't anyone who has a clear idea of the federal, state or social costs involved. The people here are apparently happy to stay in this mode for the next 6 months... you know, don't touch a thing.

BRADFORD

What's the worst that can happen now, and what are the warning times?

DENTON

I think we have a pretty long warning time now, but even so a lot of the operators are saying, don't take chances, don't touch anything.

AHEARNE

We have to explain it to the people. 750.000 people are now sitting on the edge of their chairs.

DENTON

But if you'd been here and seen how the place has transformed... visitors'center, 10 caravans, tents, communications... they've even come out with a paper. The State is on alert. So there are high social and political costs involved in staying where we are

HENDRIE

Are you...

DENTON

I have to get over their fear of the unknown, the operators' resistance to change.

NARRATOR

The technical crisis is now over for the men at H Street in Washington DG. The days to follow turn into a long discussion about what actually happened, about the investigations which will result, and about the role that the Commission it itself has played. A new struggle begins, but now it is an administrative one.

Scene 23

11.15 am

HENDRIE

What shall we turn to now, the letter ?

AHEARNE

We're talking about the letter

GILINSKY

Which letter ?

HENDRIE

The letter to the President. This is another matter, we have to make it clear that this is another matter

KENNEDY

The New York Times says here that there's going to be some kind of Presidential Commission.

Here it is, "*The President has commissioned a federal investigation into all the aspects of the TMI.*" the White House Press Secretary said.

BRADFORD

That sure doesn't emerge from the White House Press release.

GILINSKY

No, it doesn't

HENDRIE

That's what I call creative journalism. I feel for Jody. I've had the same problems with creative interpretation

KENNEDY

What happens is that someone rings up and asks, is

it OK if I write this, can I say that... and not suspecting a thing you say, yes, that's fine

AHEARNE

Yes, we could shift to some other subject

BRADFORD

An unimportant one I guess

AHEARNE

But ring and check with the White House anyway

KENNEDY

Check with Powell. I would imagine he's the best authority on what Powell said.

GILINSKY

This Commission, like the Supreme Court, reads the newspapers

KENNEDY

Sometimes

AHEARNE

So you don't think it's right that we ask the President to set up something to look at us

GILINSKY

I Think that...

AHEARNE

Is that what you mean ?

GILINSKY

It has to do with what we should tell the President, yes

AHEARNE

But the point is that you don't think it's appropriate that we suggest to the President to set up an impartial investigation ?

GILINSKY

Yes. What I mean is that he's going to do that certainly, and we want to collaborate. But it's his decision, and that's good. And that investigation is also going to look into a lot of things which don't have anything directly to do with us. But what they're going to investigate is entirely their business.

AHEARNE

It would feel better if we were the ones to ask for it. You have to look at the wider implications.

KENNEDY

But I think it's presumptuous of us to suggest to the President to look at the broader aspects. You know, that's almost what his position calls for and he knows that almost as well as we do.

AHEARNE

I just want to be assured that someone is going to take a wider view

GILINSKY

There are people thinking about that

AHEARNE

Yes, but we should recommend it

GILINSKY

One has to consider the wider aspects, there's no doubt about it

AHEARNE

But we have to make it clear that we intend to have our own investigation

HENDRIE

I agree. We'll take our full responsibility. But we're not going to say it in a letter to the President.

AHEARNE

We have to do it pretty soon

KENNEDY

But it has to be coordinated with the President's.

GILINSKY

Just say it to him

AHEARNE

I still maintain that a wider investigation is necessary, that we're not the ones who should be in charge of it, but that we are the ones who should recommend it.

GILINSKY

Are we going to go over this again ?

HENDRIE

No. People are going to be working on it. 3 or 4

Congress committees are already preparing separate investigations. The government is not going to ignore a story which has hit headline news now every day for over a week.

EPILOGUE

NARRATOR

Yes, there were to be many investigations, committees, task forces... costing several millions. And the drama is not yet over : out of 17 principal investigations, many are still under way. President Carter commissioned the most publicised investigation, the so-called Kemeny Commission, which was to recommend many, still more expensive, safety measures. The result has been a technical moratorium on nuclear power plant construction, apart from the political moratorium which several states have opted for since Harrisburg. A later investigation, the Rogovin Report, was to conclude that the TMI plant had come to just within 30 minutes from a core meltdown. As far as the NRC is concerned, the transcripts of the meetings which this dramatisation is based on were to lead to heavy criticism. Chairman Hendrie tried to save his own and the Commissions face by by a reorganisation of the Commission. He himself was to become totally responsible for reactor safety. But Hendrie failed in his attempt, and instead was removed from his position as Chairman by the President.

The path from Hiroshima in 1945, when the USA exploded the first atom bomb, causing sickness amongst the population to this very day, to Harrisburg, is marked by a serious problem for the nuclear industry : radioactive radiation, which can neither be seen, heard or tasted, and which can lead to immediate or slow death. People's fear of radiation is, according to some, the major problem. Others think this fear is healthy and well-founded.

The people around Three Mile Island were to experience this fear to the full, regardless of what they had previously thought of nuclear power. And it was clearly not an emotion to be ignored.

This is how Governor Thornburgh was to summarise his impressions of those critical days :

THORNBURGH

We sustained, and continue to absorb psychological and financial injury, the extent of which may never be fully identified. They're the kind of injuries that will live with us for years, perhaps for generations. Not all of the promotion in the world can erase the memories of central Pennsylvania as the place where the worst fear of modern man almost came to pass.

NARRATOR

Oh, another question :

Who took over after Hendrie ? Yes, Ahearne.

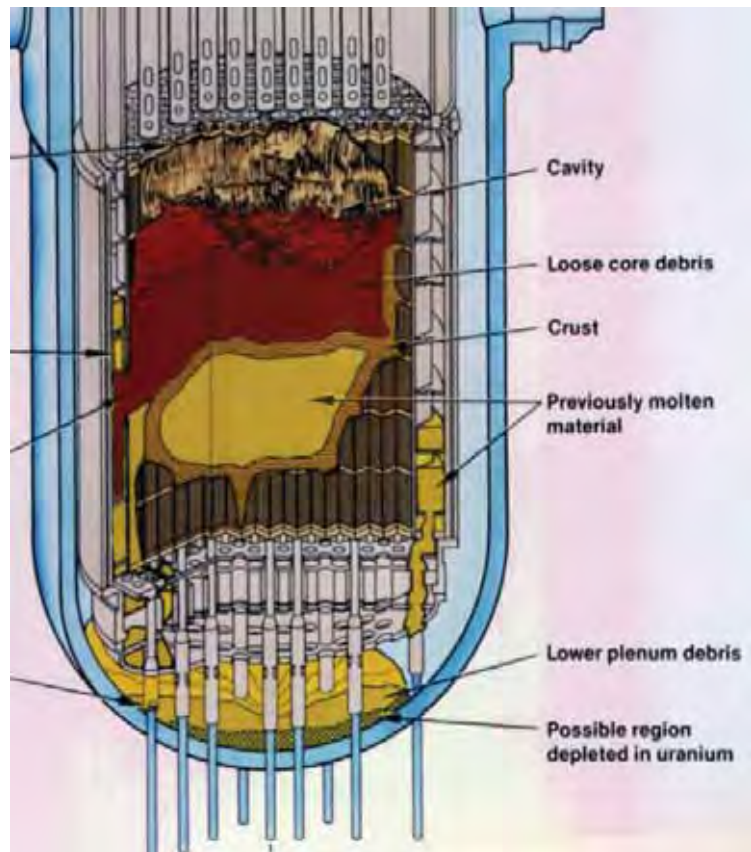
Postface

L'Histoire n'a pas donné raison aux optimistes qui pensaient que la mise à l'arrêt à froid du réacteur N° 2 de TMI signifiait que des dommages internes étaient limités. Elle a donné également tort à ceux qui ont présumé que les rejets radioactifs survenus durant la crise n'auraient pas d'effet sur la santé des habitants.

Lorsque 4 ans après l'accident la cuve a été ouverte, les experts ont découvert que de 40 à 60 % du combustible avait fondu. Les vues ci-dessous montrent le spectacle offert à l'ouverture et le schéma général après une évaluation soignée de l'état du réacteur :



Crayons de combustible détruits



Il fallut 12 ans et plus d'un milliard de dollars pour vider le réacteur et décontaminer le bâtiment réacteur. Un accident « mineur, sans incidence sur l'environnement et la santé » aura donc coûté plus cher que la construction de l'installation.

Des rejets ont eu lieu durant la phase accidentelle, qui sont évoqués dans le texte ci-dessus. Il y en eut ensuite en juin-juillet 1980 durant des travaux, notamment l'émission de $1,6 \cdot 10^{15}$ Bq de Kr85, un gaz rare ayant une période de 10,5 ans. Selon l'habitude consistant à prévoir les détriments sanitaires en les rapportant à la dose calculée, ceux-ci ont été d'emblée annoncés comme inexistantes.

Pourtant, en mars 1982 la revue *American Journal of Public Health* a révélé que la mortalité néonatale est passée de l'ordre de 8/1000 naissances durant les deux premiers trimestres de 1978 à 17,2 durant le premier trimestre de 1979 et 19,3 au second, avant de retrouver un niveau compris entre 8 et 9/1000 au dernier trimestre de 1979.

En 1985 un jugement contraint le constructeur et l'exploitant de TMI à payer des dommages et intérêts de 12,25 millions US\$ à 280 plaignants pour des enfants nés avec le Syndrome de Down (Trisomie 21).

L'année 85 est aussi marquée par une découverte qui se révélera décisive quatre ans plus tard en URSS, celle de la radiophobie. On la doit à un psychologue, Marc Sheaffer, travaillant dans un centre universitaire de Bethesda, où se trouve le siège de la NRC, une donnée géographique sans doute pas étrangère à l'affaire. Il publia une étude établissant un lien entre stress et défauts immunitaires. Cette invention reçut un accueil très favorable et plusieurs développements théoriques vinrent la « confirmer » en 1987 et 1988, attribuant une kyrielle de désordres fonctionnels et hormonaux au stress et à l'anxiété. Le lobby psy venait d'apporter sa pierre à l'édifice de minimisation de la nocivité intrinsèque des radiations émises par les rejets d'un accident atomique majeur.

La science fragmentée est un merveilleux outils pour se fourvoyer : un psy prend pour argent comptant le modèle dose-effet de la radio-protection officielle et les prédictions qui en découlent. La réalité pose question ? Le psy ne va pas mettre en doute le radiobiologiste... et, tout heureux, tombe dans le syllogisme scholastique. Revenir à TMI aide à comprendre Tchernobyl.

L'invention de la radiophobie est un événement majeur, dont les conséquences économiques et juridiques se révéleront considérables et fort avantageuses. Les malades, hors les cancers et malformés, deviennent responsables de leurs maux. Ceux qui attirent l'attention sur le danger que présenteraient les radiations sont des irresponsables. Par ailleurs, puisque les radiations sont hors de cause, le prix de la « prise en charge » par le pouvoir médical des pathologies concernées reste très modéré : celui de la parlotte, ce qu'on appelle l'assistance psychologique, dont l'application rencontra le soutien enthousiaste de la Commission européenne avec les programmes ETHOS et CORE déployés en Biélorussie dans les années 2000. Ainsi, arrivé le dernier dans la partie, le lobby psy rafle la mise, assuré d'un champ d'intervention immense, lucratif et durable. Celui de l'atome et de la radioprotection, le banquier au sens du casino, est conforté dans son rôle de maître du jeu. Son amour des radiations pour le bienfait de l'humanité cesse d'être l'objet de contestations.

En juin 1991 une étude de santé menée par l'Université de Columbia a été publiée dans le même *American Journal of Public Health*. Elle montre que la survenue de différents cancers, tels que les lymphomes, les leucémies, les cancers du côlon, du sein, de l'ovaire, de la prostate et des testicules, a plus que doublée dans les environs de la centrale. Les leucémies et les cancers du poumon ont été multipliés par quatre entre 6 et 12 km et ceux du côlon d'autant à l'intérieur de la zone des 6 km. Ces chiffres entrent en résonance avec les études montrant un doublement des leucémies infantiles au voisinage des centrales atomiques.

La vérité sur des effets aigus précoces sort en août 1996 lors d'une réévaluation de l'étude de 1991 : des érythèmes, des pertes de cheveux, des vomissements, des morts subites ont été enregistrés à l'époque de l'accident. On retrouve là l'équivalent des témoignages post-Tchernobyl et post-Fukushima.

Un réexamen de données médicales fut mené pour les années 1995 et 2002 par le Professeur Roger Levin, chef de la division d'otorynologie et de la chirurgie de la tête et du cou du *Pinnacle Health System de Harrisburg*. Les données montrent un excès de cancers de la thyroïde chacune de ces sept années, exceptée une. A ses yeux l'exposition aux rejets d'iode de TMI est une explication plausible.

Cette chronologie est intéressante : après Tchernobyl, après que, à la fin des années 80, les dégâts sanitaires de cette catastrophe sont devenus évidents, des scientifiques et médecins américains revisitent les statistiques médicales de TMI et collectent les témoignages. J'y vois un échec relatif de la stratégie de négation *a priori* de tout effet des rejets accidentels de radioactivité sur la santé. Mais on ne peut que constater les dégâts, hélas. N'oublions pas que cette stratégie du lobby de la radioprotection — CIPR, OMS et de son mentor l'AIEA — avait conduit à une mise en danger durable de plusieurs millions de personnes vivant dans les régions contaminées par Tchernobyl. Et

observons qu'elle vient de mener au même résultat au Japon, après le désastre de Fukushima.

Des milliers de plaintes ont été déposées par des riverains de Three Mile Island, en vain, puisqu'aux doses évaluées, la relation avec les radiations ne pouvait être retenue. La justice est lente et pointilleuse. Un intense processus trouva place entre 1996 et 2001, au terme duquel la Cour Suprême des Etats-Unis rejeta, sans commenter sa décision, la plainte groupée de 1 990 cas.

A bien des égards, techniques, politiques, judiciaires et médicaux, TMI est le prototype des accidents atomiques catastrophiques. Les experts de la NRC ont réussi, à tâtons, à arrêter la machine infernale sans doute très peu de temps avant que la cuve ne cédât. Cependant les discussions avec tous les échelons des responsables élus montrent crûment la difficulté de prendre des décisions. A ce niveau de risque, la protection de la vie dépend de paris complexes et conflictuels. Aux Etats-Unis le politique a une conscience aigüe de sa responsabilité envers la population. Dans l'ex-URSS, mais au Japon aussi, la préservation de l'image de l'énergie atomique l'a clairement emporté sur celle des populations. Le poids de l'AIEA était nul à TMI, secondaire et subséquent à Tchernobyl, déterminant sur bien des points à Fukushima. La technocratie onusienne gagne en pouvoir... et tous s'inclinent.

Gageons que les séquelles sanitaires de Fukushima conduiront à reconsidérer celles de Tchernobyl, selon les bilan officiel de l'OMS, 50 morts et 4 000 cancers de la thyroïde. De ce point de vue la situation pourrait être plus favorable que dans le cas de TMI. En effet, alors qu'il avait été là bas, en Amérique, nécessaire de remonter le temps, d'enquêter, d'examiner les registres des maladies, l'évaluation détaillée des conséquences sanitaires de Tchernobyl a fait l'objet d'innombrables travaux scientifiques depuis 1986. Il suffira que ces travaux soient reconnus, ce qui suppose une toute petite chose : que les faiseurs d'opinion abandonnent leur comportement de larbins crédules du lobby atomique et de la radio-protection.

Enfin, *last but not least*, quelle hâte à juger ! Juger alors que tant d'éléments restent inconnus, à venir. Comment juger des effets sur la santé qui se manifesteront dans dix, vingt ou trente ans ? Comment juger de l'importance de dépenses encore impossibles à évaluer. N'est-ce que besoin politique de désigner et condamner des lampistes ? Certes, mais n'est-ce pas aussi l'incapacité dans laquelle la plupart sont de comprendre que les aléas de l'atome échappent à toutes les procédures que la société des hommes a imaginé pour régler la société ? Hormis une seule : ne pas prendre le risque, arrêter de jouer bêtement avec le feu.

Y.L.