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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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PRESS CONFERENCE

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Room 6507

7735 Old Georgetown Road

Bethesda, Maryland

Monday, November 1, 1982

The press conference conducted by the Nuclear Regulatory Commission commenced at 1:55 p.m.

PRESENT FOR THE NUCLEAR REGULATORY COMMISSION::

JOSEPH FOUCHARD, Director of Public Affairs

ROBERT BERNERO, Director, Division of Risk Analysis

JACK ROE, Deputy Executive Director for Operations

VICTOR STELLO, Deputy Executive Director for Operations

HAROLD DENTON, Director, Reactor Regulation

P R O C E E D I N G S

MR. FOUCHARD: Thank you all for coming to Bethesda today. This is part of a campaign which we have to get press support for getting the NRC into a single location.

(Laughter.)

MR. FOUCHARD: So anything you can do for us along that line will certainly be appreciated.

Let me introduce the folks who are going to be doing the talking. First, our principal spokesman speaker will be Robert Bernero, who is Director of our Division of Risk Analysis. Robert is the fellow here who will require the wide-angle lens.

To his left is Jack Roe and Vic Stello, who are Deputy Executive Directors for Operations. To my right is Harold Denton, who I think you all know.

I think Mr. Bernero has a brief opening statement and then I assume you will have some questions, which we will try to answer.

Robert?

STATEMENT OF ROBERT BERNERO, DIRECTOR, DIVISION OF RISK ANALYSIS

MR. BERNERO: Thank you, Joe. I believe copies of this are being passed out, if you do not already have them. I will read it first and then open the floor to questions.

In connection with research which the NRC Staff has under way to develop background information for a new rule for siting of nuclear power plants, Sandia National Laboratories was asked to analyze the range of consequences for severe accidents at U.S. reactor sites. A draft report has just been completed by Sandia.

In carrying out this study, Sandia examined the actual site characteristics, including meteorological data and population distribution, for 91 existing reactor sites in the U.S. They went on to analyze the range of consequences of severe accidents using some hypothetical data and some actual site data.

Potential consequences of accidents listed in the press this morning were not taken from that report but were taken from background calculations of very low probability events which were made in connection with the study. The report does not present accident probabilities for actual reactors in operation now at these sites, but assumes a probability of one in 100,000 per year of reactor operation as a representative value for occurrence of severe core melt accident for which the safety systems needed do not work.

The combination of this unlikely accident, together with combinations of very unlikely weather conditions, can lead to calculated consequences having probabilities of about one in one billion per year of reactor operation. The results in this report did not present consequences whose probabilities were lower than one in 100 million per year of reactor operation.

There are very large uncertainties associated with these calculations and the results presented in the Sandia report do not represent nuclear power risk. For example, among the assumptions used in the Sandia study was the failure of needed safety systems, including the containment, which then can lead to hypothetical releases of radioactive material.

Furthermore, they are based on assumptions regarding release of radioactive material which are known to be overestimated by factors of ten to 1,000.

In summary, the NRC Staff believes that the numbers quoted in the press this morning represent consequences of accidents whose probabilities are extremely low and, furthermore, that even these consequences will be shown by ongoing research to be much lower.

Thank you. I am open to questions now.

QUESTION: So what you are saying is what is the probability of a major accident with human health consequences for the current nuclear plant. Two percent was used. Is that inaccurate?

MR. BERNERO: No. Really, if you break it down, the questions should be addressed serially. First, what is the probability of a core melt accident occurring in a plant and then, if you have a core melt accident -- a large-scale core melt -- what is the probability that all of the systems, including the containment, will fail.

Then, if you address that probability, further address what is the probability that anyone will be killed, and then, even further -- and this is where we start getting to these extreme or maximum calculations -- typically it involves what we call rain-out. What is the probability that the weather could be uniquely timed so that the radioactive plume would be preserved, carried in the worst direction to the right distance to be over a population center, and then just at that time rain would fall, bringing the radioactivity to the largest number of people?

All of those combinations of probability have to be assessed.

QUESTION: And what is that probability?

MR. BERNERO: What we say is about one in one billion.

QUESTION: Not two percent?

MR. BERNERO: Not two percent.

QUESTION: You said in analyzing an earlier study in July that the chance before the Three Mile Island defects were corrected, the chance of a Three Mile Island-level accident happening was once every ten or twelve years. In that context, what is the probability of the catastrophic worst-case accident killing 100,000 people in Wilmington, Delaware? What are the odds against it?

MR. BERNERO: Okay. The previous study was what we called a precursor report, which suggested a probability of one in 1,000 per reactor year of damaging the core severely. Most estimates give a probability of one in 10,000 as that estimate, and this report indeed assumes one in 10,000 as the estimate of core damage or core melt probability. That is the beginning of it, without the failure of the containment.

The probability of going beyond that to these worst case accidents is the difference between one in

10,000 and one in one billion. It's a very large number.

QUESTION: Okay. Can I ask you to translate that since the worst case listed in this study was what might happen if the Salem plant had a total disasterous accident and the wind and everything else was blowing correctly.

MR. BERNERO: If all things worked at the worst possible combination.

QUESTION: What is the probability of that happening in the area around the Salem plant?

MR. BERNERO: Well, around the Salem plant would be one in one billion per year of reactor operation.

QUESTION: Or a billion years before --

MR. STELLO: I believe the results from Sandia would put that number at 1.9 times 10^{-9}.

MR. BERNERO: Which is 1.9 in one billion.

QUESTION: How many approved reactors now do we have in a power station?

MR. BERNERO: Seventy, approximately.

MR. FOUCHARD: There are 74 licensed operating.

MR. BERNERO: When I said 91 reactor sites, we counted sites that have reactors on them or for which reactors were proposed and may not have been approved or may have been cancelled.

QUESTION: So what is the overall probability of one of these type accidents in the United States in the foreseeable future?

MR. BERNERO: Well, as we had earlier spoken of, in the next twenty years, if you assume an average of 100 reactors or so operating for twenty years, that is 2,000 years of reactor operation in a billion, or two chance in a million.

QUESTION: Even if these numbers are much smaller than the newspaper reports this morning suggested, are they much larger than you had earlier estimated the chances of these kinds of accidents being?

MR. BERNERO: No. I am confused by the presentation that suggests that these are different. The model used, the CRAC-II code, is really the current version of the code developed in WASH-1400, the reactor safety study that was referred to published in 1975. These results are consistent with what was published eight years ago -- seven years ago -- in WASH-1400.

Now the difference being WASH-1400 used a composite site, not a real site but a site which absorbed the characteristics of typical sites and was spoken of as the composite site. These calculations were done on actual sites.

QUESTION: But you did up to the thing of 100,000 at Salem, but I think the WASH-1400, or at least the thing that came out of the House Subcommittee, said that they envisioned a worst case scenario of 3,400 deaths, and now it is getting up to 100,000 deaths.

MR. BERNERO: No, no. They are vastly different probabilities. What we do -- there is a curve. We have a fancy name for it, but you can call it a risk curve (indicating) which plots the probability of exceeding a certain number of fatalities, whether early fatalities or latent fatalities, whatever the consequence is, and you make a plot of the conditional probability of exceeding it versus the level.

Just visualize for the moment if you were drawing this curve for an airplane, an airplane that holds 300 people. The upper bound of this curve, the probability of killing anyone is the probability of a severe crash of that airplane. Now typically an airplane is going to kill more than one person. If it kills anyone, it will kill dozens at once, and the shape of that curve would go out to just a little beyond the number of people that can fit in the airplane, because it is very difficult for an airplane to kill more than

300. It would have to land on people on the ground. It could land in a sports stadium and kill far more.

So the shape of that curve will give you a distribution, a risk curve, describing how many people would be the most you could kill in a single accident -- would be way out here (indicating). It would be a DC-10 in the Super Bowl game or something like that. It would be a maximum consequent, lowest probability event. And then, if you draw your accurate curve, it will describe the events down to the likelihood of killing anyone.

What we have presented in these reports and always do present is these curves, these risk curves, so one can see the distribution of risk. Now if you want to know what the one in 100,000 risk is, you have to go to that probability on the curve.

QUESTION: Is that different from WASH-1400, the one in 100,000?

MR. BERNERO: No, no, slightly. WASH-1400 estimated -- I always think in exponential and I have to convert it. One in 100,000 is one times 10^{-5}. WASH-1400 was a little lower than that. WASH-1400 was six in 100,000 for all core melts, and it was more like ten times less than that for the worst case core melt.

QUESTION: Suppose there is an assumption in this report of greater risk of certain events happening.

MR. BERNERO: No, no. This report in effect stays with the estimate of individual reactor risk that WASH-1400 has and merely examines all the sites in the country. It is not a different accident risk model. We do know, and we have a lot of work -- there is a whole body of literature on this subject and a good deal of analysis in this report -- to reflect that we believe that is an overestimate of risk, that less radioactivity can physically get out.

QUESTION: The iodine?

MR. BERNERO: Yes, the iodine. You have undoubtedly heard of that controversy that actually we are overestimating the amount of radioactivity that can get out. Now the consequences are very sensitive to that. Even only a tenfold reduction in the releases of radioactivity can make a dramatic difference in the number of early fatalities. You can readily get to the position where you estimate no early fatalities because it is a threshold effect.

QUESTION: If I understood correctly your explanation for the difference between the 1975 figures and these figures, in that the extent that these are worse is because the '75 figures dealt with a composite situation and this examines individual situations?

MR. BERNERO: No. They are associated with different probabilities. The '75 figures were associated with the probability for the WASH-1400 reactor at a different level and I do not remember the exact cutoff of that curve.

It was the curve that had all the manmade risks and it had the risk of 100 reactors. That curve stopped at a certain probability level and that was spoken of as the high limit. But actually you can continue to plot that curve down. It is on a slope, just as any of these curves, as we have presented them in this report (indicating). They are not vertical. They are coming down at a shallow angle and we could have plotted another factor of ten or another factor of 100.

QUESTION: Are you saying that the difference between the old estimate of about 3,500 deaths and the current estimate of 100,000 deaths is you are estimating far lower probability event?

MR. BERNERO: Yes.

QUESTION: Are you suggesting -- well, how do you account for the suggestion, then, that these are much more risky than you are making it out to be?

MR. BERNERO: Well, the fundamental issue, I think, is presented in Congressmay Markey's statement, and it is a common question in discussing the risk of nuclear power or of any manmade technology that can entail the same characteristics.

There are those who argue that at a certain point you do not address probability; you only look at the maximum hypothetical consequences. And if they are high, one says these stakes are too high, we should not do that. If a loaded Boeing-747 can take out the Super Bowl and kill 30,000 people at a crack, you would say that is too many, even if the odds are low. You would say that is too many and then do something to prevent ever having 747s and the Super Bowl together.

QUESTION: If I may follow up on that, are you suggesting that that is the same kind of probability?

MR. BERNERO: No, I do not know what that probablity is.

QUESTION: Okay. Putting the question that way, comparing your analogy of a loaded DC-10 falling down into a packed Super Bowl crowd with the chances of the worst case accident postulated by the Sandia studies, which is more remote?

MR. BERNERO: I would suspect the reactor accident is the more remote. I have been on airplanes flying over crowded sports stadia and they have been big airplanes.

QUESTION: Then your message to Mr. Markey is that he is wrong?

MR. BERNERO: Well, it is a major philosophical point. Do you consider the probability of these events in dealing with tolerance of their possibility? Mr. Markey is saying you do not, and the policies of this Agency, I think, to this date are clearly that we do.

QUESTION: Could I ask you to try once again to estimate the probabilty between, say, now and the turn of the century of this kind of accident happening at any given plant? Are you saying they are a billion-to-one?

MR. BERNERO: No, no. I am saying that for any one reactor in any one year, we are talking about a probability of such an accident that is about one in one billion of happening. If I assume that there are twenty years remaining in the decade and actually there are a few less, and if I assumed we averaged about 100 reactors in operation during that period, I will have twenty times 100 reactor years of operation per one chance in a billion.

So I will have 2,00 chances -- twenty times 100 -- per billion, or two chances in a million of this kind of accident.

QUESTION: Well, that is a whole lot lower than two percent, right?

MR. BERNERO: Yes.

(Laughter.)

MR. BERNERO: Two percent is two chances in 1,000.

QUESTION: Two chances in 100.

MR. BERNERO: It is two chances in a million per 20-year period.

QUESTION: If these 100 reactors operated for a million years, are you saying there are two chances that there could be such an accident?

MR. BERNERO: Well, I do not believe they would.

MR. FOUCHARD: We would be satisfied with forty years probably.

QUESTION: Mr. Bernero, we have talked about the chances. Are you questioning, quarreling at all with the dollar figures or the death figures if the accident were to happen?

MR. BERNERO: Well, we do not give a whole lot of attention out to that end of the calculation. For instance, when we calculate remember I said these are what we call rain peaks. When you calculate the amount of radioactivity that could be rained on a high population area, that is carried out carefully in a plume and then the rain falls just right, it is very significant how much of the radioactivity is washed away, runs off in the rainfall.

We assume none of it does. So we tend to exaggerate these calculations. I would not say that they are themselves as realistic as the exposure calculations we make for the near end close to the reactor analysis.

QUESTION: What is the change if you use the precursor data, the precursor suggestions?

MR. BERNERO: Well, they are apples and oranges. The precursor report -- and, by the way, there was a great deal of review of the precursor report going on, all of which tends to drive that number down, but the precursor report is calculating a different thing altogether.

It is calculating or trying to calculate the probability of starting to get into trouble rather than the other end, of totally failing and having the worst possible accident.

QUESTION: Could we go back to the explanation about the difference between the '75 report and this one, and we say it is the lower probability used in this one, to try that in layman's language. Is that what you are talking about the plume going in exactly the right direction and the rain coming at just the right time?

MR. BERNERO: Yes.

QUESTION: Is that the difference between these figures and the older figures?

MR. BERNERO: The only way I could account for it is because we are using what amounts to the same calculational model. We have some refinements in it, but they are not big enough to make that much of a difference. And so the only thing -- I would have go through every one of the sites and extract and compare sites to the WASH-1400 calculation, but it is the same model. They are the same results, and invariably you cut off at a probability.

You cut off at a certain probability as representing a maximum.

QUESTION: Okay. If the 100,000 is one in a billion probability, could the 3,400 figure cited in the '75 report that Congressman Markey cited, what is the probability of that? If this is one in one billion and it is a difference in probability, what is the probability for the one in 3,400?

MR. BERNERO: I think it is a factor of 100 less, maybe a factor of ten. I just do not know. I would have to go back and calculate it from that report.

QUESTION: Could I ask you to summarize all the things -- you have done it once before, but as briefly as you can -- all the things that would have to go wrong for this worst case thing to happen and what the probabilities are?

MR. BERNERO: Okay. For this sort of accident sequence to happen, you have to have the worst case core melt accident scenario, and that is -- it is a full-scale core melt and it is a full-scale core melt where nothing works, including the containment. Everything fails very quickly, so you have a very large release right away, very soon after the core melt accident.

Then you have to have the worst combination of meteorology -- that is the weather conditions, the wind speed -- and typically the worst condition means that you have very calm meteorology so that the wind does not dilute the stuff, does not scatter it. It is calm and keeps it moving in an undisturbed cluster or cloud until it is above a high population region and then, at that point, you have it rain so that all that radioactivity drops on the peoples' heads.

In that way there you get the worst case combination of meteorology, population distribution and, of course, you started with the worst case core melt. The odds will vary from site to site, if you do the calculations with the available data, but a typical value which represents the odds of this kind of an accident, including the probability of the worst case core melt occurring and the probability of the weather and everything else, is about one in one billion per year of reactor operation.

QUESTION: Do you conclude, then, that all of the 91 sites are acceptable?

MR. BERNERO: Well, that is the substance of this report, and it is far too complex to go into with a simple numerical description. The purpose of doing this is to see how the risk varies with the site and to see how our present siting criteria limit risks and how they might be improved by limiting, for instance, the proximity of population centers for future reactors.

There is no simple answer that this proves they are acceptable or not acceptable.

MR. FOUCHARD: I think we should point out the Commission has a proceeding under way, as you well know, with respect to the Indian Point site, and the Staff is not prejuding the conclusion of that proceeding.

QUESTION: Why is there such variance in the radial for death and the huge variance in the radial for injury in the calculations?

MR. BERNERO: Well, if you look at the terms, acute fatality, early injury and latent fatality, those are commonly used in these calculations. What they mean are: Acute fatality is someone who has suffered so much radiation exposure that they will die soon, within a year of the accident, and typically that means they have suffered a radiation exposure of about 500 rem. There is actually a biological curve for that, but in round numbers 500 rem exposure is roughly synonymous with fatality.

An early injury is an estimate of the radiation exposure level at which you would show clinical effects. That is, a doctor could examine you and detect a difference. And most people take that as 50 rem -- a 50-rem dose -- and that is what we use in our calculation. That is a much larger number of people because it is a lower dose.

And then the latent fatality dose is actually a complex calculation of the odds of suffering cancer death for anyone who receives radiation exposure in the accident, and that is down to the very low levels too.

QUESTION: What I mean here -- and I have to take these from the paper because I have not had time to look in here and get them (indicating) -- say why would the Limerick in Montgomery, Pennsylvania, says peak fatal radius in miles and it has 710,000 miles?

QUESTION: That is under the wrong column.

QUESTION: But that in this column has only 6,000 miles.

QUESTION: You are looking in the wrong column.

MR. BERNERO: Excuse me. There are two editions of this morning's paper that have different tables. We had a hard time with that table too.

(Laughter.)

MR. BERNERO: I can only refer to the authors.

QUESTION: I will not find that huge variance?

MR. BERNERO: No. You will find variance. It depends on the population distribution. If you have a very small town that gets a lot of radiation, very high radiation dose, in one of these maxiumum calculations, you can easily have everyone early fatality and no one early injury because you have killed them all.

But with a larger population center you will have large numbers of people at early injury.

QUESTION: I was just wondering why it would be so far away in the case of some of these classes.

Maybe these figures are incorrect.

QUESTION: Well, the figures are what, 20 to 35 miles -- about 20 miles for death and up to 75 miles for injury?

MR. BERNERO: It will vary by the site because the calculations all use the actual population distribution at the site, and Wilmington, Delaware, of course, is the city for Salem.

By the way, I am assuming they were correct in extracting all those numbers. We have not had a chance to check them yet. But the Salem site is a very remote site in southern New Jersey and you are getting one population zone across the Delaware River. It will vary with each site.

QUESTION: Going back to the one in a billion calculation, based on what you found, I know it is very preliminary on the iodine studies and the source studies, and you mention in here that these consequences will even be lower, as shown by ongoing research. How much lower can you estimate that one in a billion to be, or can you?

MR. BERNERO: We even debated as recently as to what to say in this statement. The results are not all in. It will vary depending on the type of accident, the type of reactor, the individual accident sequence in that reactor, and I just do not know yet. I would say at least a factor of ten in overall risk. That is my personal -- that is entirely a personal view.

There are others who are much more sanguine than I about it.

QUESTION: How much more sanguine? Do they estimate greater than ten?

MR. BERNERO: They hope a greater reduction.

QUESTION: So then we are talking about one in ten billion risk? That is your personal estimate?

MR. BERNERO: Well, except that when you are speaking of early fatalities it is a threshold. You do not kill the people. The odds are they are not killed by ten times less than 500R, so if you drop a factor of ten in the source term or release, the early fatality term may disappear or nearly disappear.

QUESTION: In risk estimates, can you put a billion to one in perspective? What are other risks that are a billion to one? What does that mean? It is remote, but what are the odds of getting killed in an airplane crash? What are some comparable odds? Do you have any?

MR. BERNERO: The only thing I was thinking of was the airlines in reliability calculations. In certifying new aircraft, the FAA uses odds of one in a billion per flight hour as the most unlikely thing. That is per hour of flight, not per year of operation. That is per hour of airplane. They do not calculate -- they do not attempt to calculate the reliabilit of everything.

They calculate the reliability of the flaps and the engines and the control systems and things like that, but not the pilots and not the structure. I do not know if that is a useful perspective.

QUESTION: In this report that has been given out, the nearest comparable table that I can find is your Table C-1, which does talk about mean early fatalities, early injuries and latent, but it is all a mean as opposed to a peak and the numbers are very different.

For instance, for Salem it is 120 instead of 100,000.

MR. BERNERO: Well, if you look right behind that table you should find these curves (indicating).

QUESTION: Would you give us a layman's explanation of that, please?

MR. BERNERO: I am on C-21, as an example. I am on page C-21.

QUESTION: I am interested in how these two interact.

MR. BERNERO: Well, as an example, if I look at page C-21, the curve that is closest to the bottom of the page, and look at the middle of it, you will find a curve with little Xs to mark it, and if you look at the legend, the key says Surrey. That happens to be a WASH-1400 plant. That was one of the plants published in 1975.

Now this is for the real site, not for a composite site. Now what that says, if you look at that curve, it strikes over on the lefthand side between 10 and 10^{-1}. Now that intercept means the probability, the conditional probability, of killing anyone is between one chance in ten and one chance in 100, if you have an SST_1 release -- the worst case core melt.

So if I take my one in 100,000 of the accident, that is the worst case core melt accident scenario, and I look in here, it says that if I have that, it is about three chances in 100 that anyone will be killed at Surrey. So 97 percent of the time, those accidents will not kill anyone at Surrey. Three chances in 100 those accidents will kill someone.

Do you follow me?

QUESTION: Kill one person?

MR. BERNERO: Any one. But the

characteristics of an accident are -- you see, that first line is 10^{-0}, which is mathematical to one, killing any one person. Now if I go out, it gives me the odds progressively lower of killing ten people or 100 people or 1,000 people, and I can follow it down.

And if we had plotted some more to go down to one in a billion, we could pick up that maximum value that is apparently in the table that was published in the paper. Now the mean -- when we speak of the mean, we are looking for the distribution of risk, the weight of the risk, and the weight is the area of the curve. That is how we calculate that.

It is a mathematical average. It is not the worst case and it is not the best case. It is the mathematical average of all the cases and that is what we tabulate there. If you wanted to read the others, you could read them off of here and if we had taken the prerogative of plotting another factor of ten or more lower on the page, if we had the room, we could have picked up those, most of those.

I think most of them -- you will find most of them about one in a billion. We would be one more notch lower on this page and some would be above it and some would be below it (indicating). So to be sure you got all the peak values, you would probably have to go, oh, sixty percent again as big a curve.

QUESTION: What are you saying is the probability of any one, a single person, being killed? The odds against that are what -- one in -- I am not clear.

MR. BERNERO: Well, on this curve it tells you that if you have the core melt accident release, the odds of killing anyone are about three chances in 100 for that site, with the meteorology that is --

QUESTION: That assumes failure of safety systems and all that?

MR. BERNERO: Oh, yes. That assumes a big release as we monitored it in WASH-1400. Let me say that most of the meteorology blows the stuff away. You will have latent cancers, if you look at the other curves. You will have people exposed to enough radiation to have risk of cancer, but not 500 rem, not enough to kill them.

QUESTION: Can you speak to the issue of whether or not having this information in hand makes the NRC more concerned about the general riskiness of plants than with this previous information?

MR. BERNERO: Oh, no. On the contrary, I would say that this information in hand indicated to us, to the Staff at least, we felt that the siting parameters that we have now -- that is, the siting requirements that are on the books and by which most of the reactors were sited -- appear to be good enough.

We are looking at the high population sites separately, as most of you know. You know, we have a hearing on Indian Point. The reactor regulators have looked closely at plants like Limerick, Zion and others like them that have higher than normal population. Most of the sites are more typical ones, like our current siting criteria, and these results indicate to us that our current siting criteria appear to be sound and a good risk basis for them

We have withheld, at the Commission's direction, further Staff work on the siting development, a new siting policy development, until we have this new release information, because that can have a significant effect on the results, and what we did in this report, since this would now go into publication as sort of a temporary or interim report, we had sensitivity analyses done.

If you look up in the front of this report, you will find sections where there are sensitivity analyses to calculate what are the differences if the siting source term drops, if the amount of radioactivity drops for the iodine alone or the iodine and other nuclides, and it is done in different ways to get a feel for that.

And, if anything, it would suggest that when we have the newer information, we might well probably recommend to the Commission at least keep the siting criteria we have, possibly recommend something even more lenient.

QUESTION: Could you sum up one more time in very simple language, extremely simple language, why these figures are not worse than the 1975 figures?

MR. BERNERO: Because people will, when you speak of a consequence that is calculated, you have to speak of the probability associated with it, and it is calculated for a specific site and a specific release category.

Now the reactor safety study which was published in 1975 calculated two reactors and calculated their risk for what was called a composite site. It is no real site in the United States. It was an amalgam of site characteristics. What this report has done, and these numbers represent, is two changes. One, the sites. This report calculates all real sites. Two, this report does not use the real reactors in the reactor safety study, which are, I will call them, two-thirds size.

The reactor at Surrey is 750 megawatts electric, a number like that -- 700 or 800 megawatts electric. These results were calculated for a 1,120 megawatts electric reactor such as you would have for a new application, presumably, and the probability of the severe accidents was not exactly that given in WASH-1400, but the one given in this report, that the worst case core melt is one in 100,000 per year, which is a little bit more.

QUESTION: But these figures are much more realistic because of all the things you are saying. I mean, the more realistic risk is spelled out in this report than in the 1975 report. I mean, you were dealing with imaginary models in 1975.

QUESTION: Because you are using real sites.

MR. BERNERO: Yes, I am using real sites and in some cases I am using a bigger reactor than is really there. It is proportional to the size of the reactor.

QUESTION: Is this the best information that you now have as far as actual sites?

MR. BERNERO: Oh, yes. As far as the sites, we are using the best information available for the meteorology.

QUESTION: Information you did not have before?

MR. BERNERO: Well, some of it is more recent, but no, I do not think that changes it much. I do not think it changes it because we are doing individual sites. The reactor safety study just looked at representative sites, but we are using the actual population distribution and meteorology. We are using a slightly higher probability of a severe release occurring. We are using a slightly higher power level, and we are using a cutoff probability that I believe is a factor of ten lower than the reactor safety study in way it plotted its curve.

MR. FOUCHARD: I do not think that was the simple answer that Bettina was looking for.

QUESTION: What is your title at the NRC?

MR. FOUCHARD: Mr. Bernero is Director of the Division of Risk Analysis.

QUESTION: Can you explain the use of the acronym CCDF? What does it mean?

MR. BERNER: That is just a fancy name for this risk curve -- complementary cumulative distribution function -- and I thought you would have jeered me out of the room if I had said that. It is just a mathematician's description for it.

MR. FOUCHARD: One more question.

QUESTION: Under the Price-Anderson Act, what is the reaction of this study to your perception of the coverage required now, insurance coverage, of the power plants under the Price-Anderson Act?

MR. BERNERO: I do not know. I do not have any idea.

MR. FOUCHARD: I do not know that there is a Price-Anderson expert in the room. In the Commission there certainly is, but the Commission will just have to consider that once it has a chance to examine the study.

QUESTION: But what about at this point?

MR. FOUCHARD: We do not have any reaction at this point.

Well, thank you very much for coming. Remember my opening gambit, please. We would like a single building.

(Whereupon, at 2:35 o'clock p.m., the press conference concluded.)

NUCLEAR REGULATORY COMMISSION

This is to certify that the attached proceedings before the

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in the matter of: Press Conference

Date of Proceeding: November 1, 1982

Docket Number:

Place of Proceeding: Bethesda, Maryland

were held as herein appears, and that this is the original transcript thereof for the file of the Commission.

Anne Horowitz

Official Reporter (Typed)

Anne Horowitz

Official Reporter (Signature)