

Remarks by MEMA director Kurt Schwartz at the Barnstable County Regional Emergency Planning Committee Oct. 3, 2012 Harwich Community Center

So Chief I appreciated the remarks and it is truly my pleasure to be here by way of introduction, again my name is Kurt Schwartz. I am sort of dual-hatted. I serve as the state's Undersecretary for Homeland of Security and Emergency Management in the Executive Office of Public Safety and for the past two and a half years I have also served as the director of the Massachusetts Emergency Management Agency. With me today is Christine Packard who is our Department Director for Emergency Management Services and her section of the agency includes our Planning Nuclear Preparedness Division. So again, it's really my pleasure to be here. I want to start by applauding the work of the Barnstable REPC and in particular how the REPC has embraced an all hazards approach to regional planning. There is, and I sometimes I make statements that I say I will deny that I ever said this. This is one of those. There is no other REPC or region in the state that enjoys the extent and level of regional planning that goes on here on the Cape and you folks are better off for it. So I applaud you for that. At MEMA we enjoy, and certainly in my tenure, we have enjoyed a great working relationship which is between MEMA and the REPC and with emergency management directors across the Cape and Islands. That relationship is really built on the ground or at the floor between our regional office in Bridgewater and you met at least 3 of the members of our regional office introduce themselves but they are the people that on a daily basis are working in your communities and your region. And I am privileged every now and then get to make a trip down here and step into what I am told is a fairly hot topic of conversation and I am glad that I can be the catalyst to bring so many people to your meeting. And I understand you have 30 members of the public so 30 members of the public that now want to be on your committee. So today what I want to do is spend some time talking about nuclear emergency preparedness and planning with obviously particular emphasis and focus on Pilgrim nuclear. As you all may know or sure you do know MEMA is the state agency that has the responsibility for coordinating planning. I say coordinating....we don't do....we coordinate planning at the local regional and state level around 3 different nuclear power plants, Pilgrim being located here in Massachusetts. But we are also responsible for coordinating the Massachusetts component of planning around Seabrook which is in New Hampshire and Vermont Yankee which is in Vermont. So we have a fairly large planning unit that focuses on nuclear power plant emergency planning and preparedness issues. John Gavarous, who is in the back, is one of our nuclear preparedness planners. He works out of the Bridgewater office and focuses on Pilgrim. Today I hope begins a new dialogue between MEMA... direct new dialogue between MEMA and the Cape and Islands through your REPC. I hope to leave here today with a commitment to work together to address some

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of the issues that we're going to and I'm going to raise and you are probably going to want to discuss as we move forward today. I am here because MEMA embraces the need for enhanced planning on the Cape and in some cases planning that has not taken place before or certainly has not taken place to the level that I think that by the end of the day we will all agree will take place. Today is the beginning of a dialogue. In the days and weeks to come I hope that our staff will work directly with Sean to build a planning team that will tackle some of these issues. MEMA is no way shying away from the issues that many of you have raised either directly or indirectly—either directly with MEMA through the press through your community so.....  
(5:30)

So right at the outset let me just put on the table the two areas that I think we need to begin our planning process around the two focal areas. One of them is obviously traffic management and traffic mitigation all around a Pilgrim event. How are we going to manage the traffic impacts in your communities on the Cape in the event of an incident or perceived incident at Pilgrim? So we need to focus there. And second, as part of that it integrally related to it we need to focus on building a stronger and better communications plan that puts critical and critical information in Cape residents hands in real time . If there is an incident, an event, an emergency at Pilgrim, our success in dealing with the issues on the Cape will in part depend on how well we can keep the public on the Cape informed of the situation and to provide real time guidance to the public as to what you should do and what you should not do. So those are the two areas that I am hoping we will begin our focus. Let me say right at the outset before we start focusing on maps and getting down into details. I am not a scientist. I'm going to echo something chief said to you. There are people in this room that know much more than I know and that I will ever know. I am not a scientist. I ...MEMA and all of us in the public safety field are in the business or making risk based decisions and in order to make good risk based decisions we need to sometimes rely on the facts and opinions of experts and that's something that I do in this field. So I m going to make some statements which are scientific conclusions. I'm not the scientist. I am relying on the best science that I have today. I understand that some people may want to challenge components of the science. I am the wrong guy to challenge it with. I have an open mind but I will talk about science but just let me preface it by saying we're not going to get very far trying to challenge me on the science because it's not my science. Let me also say right at the outset that in this area MEMA relies to a very heavy degree on the scientific findings and conclusions of the NRC—the Nuclear Regulatory Commission. I know that there are also going to be people who are suspect of the NRC and its findings and conclusions. I understand again I have an open mind and there will be room for dialogue as we move

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forward during this process to see if we need to work with other sets of scientific findings and conclusions.

(9:30) So sort of an other assumption that goes into our planning and into my comments. You have heard others say that this is not something that I certainly didn't make up this statement. You know we plan for the worst and hope for the best. Those of us that are in the planning business we plan for the worst so I say that because as we approach nuclear preparedness planning, **we assume for purposes of planning that there is going to be a release from Pilgrim**. And then we figure out how we can best manage the release. So I don't think we need to get into a discussion of probabilities. How likely is it that there is going to be an event at Pilgrim? How often is it going to be? Once every twenty years? Once every 50 years? Is the risk of a release increasing as more and more.... if there is more dry storage or if the facilities get older? Those are all very good questions but for our planning purposes we assume that there is going to be a release and let's just plan for it. It doesn't matter to me whether it is going to be released in 3 months or 1 year and whether it is going to happen.

Probabilities.... whether the probabilities are that it will happen once every 5 years or once every 100 years doesn't matter. I am assuming it's going to happen so let's just plan for it. So you're not going to hear me talking about probabilities. I personally believe that it.... you know **a release is a low probability event but it's a high consequence event**. But for purposes of moving forward with planning let's just assume it's going to happen. So I am going to make some references to and focus ....

(11:45) Now there's one thing I forgot to bring. Let's see who in the ... Does anyone happen to have a laser pointer on them? Oh come on somebody has—ok—so we're going to go without a laser pointer because I don't have one. Oh we have one in the car so we may have the matter (inaudible). All sort of people are running for their cars now so maybe we have one. I forgot to bring one and my apologies. Let me just make some references to the map because I am going to keep referring back to it and until such time as we get a pointer, I'm gonna—oh look at that. I don't have to be the map (inaudible).....

(12:30) Ok, so just so we all know what we are looking at. There is Pilgrim nuclear power plant in Plymouth. And there is the Cape Cod Canal and our two bridges. I am going to say our two bridges because I have spent much of my adult life living on Martha's Vineyard. I consider myself to be a resident of the Cape and Islands. I got my start in this career as a police officer on the Vineyard. I have been a homeowner there for 30 plus years so I consider myself to be.....these are our bridges. So and you'll see the concentric circles. The important circle that I am going to refer to is this circle right here. This is the 10 mile radius out from Pilgrim every direction. Now I'm going to be ...I got multiple.... if I get it wrong Peter will come up and correct me from the back of the room. I going to ....I want to make sure that we all have the same

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understanding when I use terms everybody understands as some of you know what I am talking about. I am going to make the assumption that we should all get the same sort of base understanding. So why is it this circle important? The 10 mile radius out from all nuclear power plants in the United States that area ten miles around all nuclear power plants are referred to as the emergency planning zones or EPZ around nuclear power plants. The federal government mandates that there be a ten mile emergency planning zone around all power plants and at a base level, the mandates to power plants and the mandates to states and the state emergency management agency and the mandates to communities within those 10 miles are that you have to do enhanced planning within that 10 mile zone to manage and handle a nuclear power plant emergency involving a release of radia.. radio...radiation , radioactive materials so the mandate on MEMA the mandate on Pilgrim and the mandate on the communities within 10 miles is that we all do this enhanced planning. (15:34) So when I refer to the EPZ I'm referring to this area. Now as you all know, if we just focus on the southern end--there's the southern end of the EPZ-- and that falls a couple of miles north of the Cape Cod canal. So no part of the Cape is within that 10 mile emergency planning zone. That explains why to date you do not have in your communities a state led enhanced planning focus around Pilgrim. It's because you fall outside of the 10 mile EPZ. Now I 'm going to talk about the magic of that 10 mile number. Why is it 10 miles? Why is it that some people think as a result of Fukushima that ought to be 20 miles, 30 miles, 40 miles, 50 miles? How do we make sense out of what the state department recommended after Fukushima for US citizens in Japan? How do we make sense of the state department using a 50 mile radius? How does that square or not square with the 10 mile radius we use here in the United States? I'm going to touch on all of that and give you my best understanding of the science so..but let me just.. that was a nuclear... that was a disaster right there. So within the 10 miles within the EPZs, as I said, we have an enhanced planning effort and I can tell you that the communities within the EPZ spend a lot of time, energy, money, and resources planning and preparing for that thing which we hope never happens..an emergency and the threat or an actual release from the plant. What is it that we plan around? Well, we plan around how to communicate with the public. How do we have ..How do we ensure that people within 10 miles of a plant know in advance of an emergency? What it is they are supposed to do. How is.. we plan around finding out and making sure that we can inform the public that there's an emergency. We plan around having the public know how to respond when they learn of an emergency. And we plan around and most...the most complex planning we do is on how to evacuate people that are within the 10 miles. So within the 10 miles EPZ and this is true of all the EPZs there are evacuation plans. There are local evacuation plans that tie into regional plans that tie into a state plan. We have evacuation plans. We

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train on those evacuation plans and we exercise those evacuation plans. And there's no other area of emergency management, and I can say this to you as a state director, of relative to other states in the country we have a relatively large state emergency management agency because we don't have county government in this state. I can tell you there is no other area of emergency management that is exercised more than nuclear preparedness and it's because of the regulations that are imposed on us.

(19.41) So within the 10 miles, we have evacuation plans. And they're built local, regional, state. So if we have a threatened or actual release of radiation we have a system to stand up emergency operation centers. We have a system to warn the public. and we have a system to evacuate. We have special plans around how to evacuate children out of schools and day care centers and camps and to move them to schools that are outside the EPZ. We have plans for how to direct cars to move out of the EPZ. We have bus routes that are designed where bus plans to pick up people who don't have their own transportation. and how we get those people out of the EPZs. We have host centers outside the EPZ where we send people who don't have some place else to go. We have centers where we reunite parents and children. We have plans for how to distribute potassium iodide KI to people who may have been exposed to radiation during a release. So that all exists within the 10 miles. Now is the plan, plans perfect? No. We continue on a daily basis to tweek and sometimes substantially upgrade our plans. We try to do it in partnership with the plants. Sometimes we work well with the plants on some issues and on some days we are butting heads with the plants. So it's not we I will tell you that we enjoy a pretty good relationship with the plant but we're not in bed with each other. Excuse the crude expression but you all know what I mean. And there are days when we push them and there are days when they push back on us. The plants fund..... the plants fund .....much of the planning work that takes place. They do that with direct payments to the communities and they do it with direct payments to the state emergency management agency. (22.25) That's what takes place within the 10 mile EPZ. I am well aware that if you fall outside of the 10 mile EPZ today, this is true not just just in Pilgrim but in most EPZs around the country, if you fall outside the 10 Mile EPZ you don't have the benefit, residents and communities, of any of that enhanced planning that takes place in sort of plant funded planning that takes place. If you did, we probably wouldn't be here today. (23:04) So let me talk for a minute about why that circle is at 10 miles and not at, for example, 20 miles. When we think about and plan for a release of radiation from a plant, we think about two very distinct dangers. One is a danger of inhalation. Inhaling radioactive materials that are airborne. So I'm going to talk about inhalation danger. We also think about and worry about a different danger which is an ingestion danger. Ingesting items that have radioactivity on them typically because the radiation has fallen from the sky out

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of the air and we now have radioactive material that is on the grass and plants and hard surfaces, whatever. And radioactivity may be ingested by eating the tomato out of the plant. It may be ingested by the cow that is grazing on the grass. It may be ingested by the child who plays in the grass and then puts his hand, her hand in their mouth but any way in which the radioactivity radioactive materials can get into your mouth and be ingested. So we have inhalation dangers by breathing in radioactivity and ingestion dangers by consuming them. The inhalation danger is the danger we plan for the most and it is the one that we have to respond to the quickest. If you have a release of radioactivity from a plant into the air, our first focus as emergency planners is to mitigate the consequences of inhalation. Now this is where the 10 mile EPZ comes in. The question is when radioactivity is released here into the atmosphere how far will that radioactivity carry in the air and at what levels? We know that the radioactivity can carry, and we're going to talk about it in a few moments, radioactivity and radioactive materials can move and carry for many many miles and well beyond the 10 mile EPZ. We know that's going to happen if there is a significant release. It doesn't necessarily happen with a small release but we certainly plan for the radioactivity to extend many miles out from the plant and what direction it is going to move with the prevailing winds. So if you are on the Cape and there's a release and the wind is blowing to the south to the south/southeast to the southeast you know east southeast east.....it is moving towards you. (26:51) Now so that's distance. But the other thing we have to pay attention to is the levels of radioactivity in terms of the inhalation risk. The science as provided to us, now I will tell you that in preparation for this meeting, we called on the NRC and they agreed and for a briefing and an update on the science and so we number of us met with the NRC just a few weeks ago with the fairly large team from the NRC to not just nominally discuss what I am going to say to you but challenge them on and to challenge them on this in light of Fukushima. At the end of the day the conclusions of the NRC remains the same and I'll talk about Fukushima and why that is. I already see there is a gentleman in the back I won't call him out but he's shaking his head I know that there are people—I'm not calling you out!—I'm just saying I know there are people that want to challenge the science and I'm not in a position to tell you you're right or you're wrong and we will have the ability to have this dialogue. So I appreciate that that there are differences of opinion on this but so.....I have said to you that radioactivi...radioactive particles may carry many miles well beyond 10 miles from the site of the release but the key finding that the NRC bases this 10 mile zone on is that the levels of radioactivity drop fairly quickly and dramatically with both time and distance. And the NRC studies supported by the studies that have taken place around Fukushima are that the radioactive levels.... radioactivity.... radio.... levels of radioactivity in the atmosphere diminish significantly and by about 6 miles

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those levels have dropped below the danger thresholds. Meaning that they do not present any immediate, imminent inhalation risk to the public.

(29:41). Now I'm going to come back to ingestion risk and talk about 50 miles and what all of that means. But I am just talking about inhalation risk. So by 6 miles, the studies say the inhalation risk has dropped to a point where there is not a danger from inhalation poisoning. Now people ask the question, What happens if the wind is blowing at 40 miles an hour instead of 10 miles per hour? Because you know intuition would tell you, well, at 40 miles an hour it means it's going to get here much faster so that six mile thing doesn't make sense. Well, actually the science says that in the event of a release, the stronger the wind is blowing the safer we are. The wind, the stronger wind actually dissipates and diminishes the levels of radioactivity and that works to our favor. The fast, God forbid we have a release at Pilgrim, the best thing that can happen to us is it takes place in a northeaster where it is raining in sheets and the wind is blowing at 40 miles an hour because rain, snow, fog, and wind are our friends in terms of bringing down the levels of radioactivity in the atmosphere. So the NRC says that at about 6 miles, that's the critical point. By 10 miles, you're inhalation risk has dropped to a point that we don't have to do enhanced planning to deal with inhalation. Now...what happened in...well, let me go on and I will come back to Fukushima. So that is why there is a 10 mile EPZ. Now in the last number of years there's actually been a number of debates. There have been states and regions that have actually asked the NRC to reduce from 10 miles.. to make a smaller EPZ. There are some areas in the country that have argued that we don't need to plan out to 10 miles. That we are ok to plan out to 6 miles. The NRC has held them to the 10 miles and has not allowed a shrinking. There are also communities in areas that have asked the NRC to expand and increase the size of the EPZ and the NRC has also said as a matter of science we're not going to do that because science doesn't bear out extending the EPZ.

(32:45)The EPZ, the 10 miles, is meant to deal with the inhalation danger. Now if you're within..... if there is a release and you're within that area in which there is going to be an inhalation danger, meaning within 10 miles and is probably less than 10 miles but we use 10 miles. If you're in the EPZ and there is a threatened or actual release, what do we do? What do we do as planners? What do we ask the public to do? What do we ask the public to prepare for? There are two ways to mitigate the inhalation risk. One is to get outside, get outta Dodge, which is to move outside of the EPZ and the other and that....that by far is the best course of action if time and circumstances allow so as when we exercise our nuclear preparedness plans with our local EPZ communities as the responsible I typically as the state director am the person who make the decision—do we evacuate or do we not evacuate? and I do that based on



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recommendations that come to me. But if we can safely move people out of the EPZ, that's the decision we make. So if there appears to be a likelihood of release and time allows we call for an evacuation. Now typically we don't look at evacuating an entire EEP. We look at the direction the wind is blowing and we do plume modeling and we evacuate areas that are within or close to the plume. So if we had a due south wind blowing and the national weather service was saying it was blowing at 15 miles an hour to the south and there is no likelihood that in the next 6 hours that's going to do a 90/180 degree turn to the north, as we would be looking at evacuating areas to the south but not necessarily to the north.

(35:27) But our first, our preferred response is to evacuate. If evacuation is not possible, either you know and why might it not be the best course of action—well if there is already a release in progress you know if we...if we go from the point where we get the call at MEMA that there is an emergency at a plant, if we go from a emergency thing we'd been notified of an emergency to an actual release in a matter of an hour, I mean in a sort of worst case scenario, like that there probably is not going to be time to evacuate people before the release. And once there is a release we don't evacuate people into the release. The best course (inaudible) that's just exacerbating the situation so in that case, we go to a shelter in place order. We tell people get inside, close your doors, your windows, shut off your air conditioning, HVAC units, remain indoors. The science says that sheltering in place significantly mitigates the inhalation danger. Is it as good as evacuating? Obviously not, but those are the two very key decisions that ultimately I as the director have to make if there is a release. Evacuate or shelter in place and we talk about evacuating out 10 miles in that immediate evacuation because what are we worried about? The imminent urgent danger is the inhalation risk. If you are outside of this ten miles, we are not thinking about asking you to evacuate. So if you are on Cape Cod, and there is a release from Pilgrim, there not a circumstance that I am aware of in which as the director of MEMA I am contemplating calling for an evacuation of the Cape when you are.. if you're in Sandwich and Bourne at the closest you are about 13 miles or so from Pilgrim and at the farthest, well, you know, depending on which way the wind is blowing you are many, many miles away. So let me repeat that. There is not a situation in which we would be contemplating calling for an immediate evacuation of the Cape in the event of a release because you are far enough away that you are not in the inhalation danger zone. Now is that the end of the story? No, it's not.

(38:34) I also said that there's an ingestion danger associated with the release. What happens over time depending on how long the release and how big the release we know that the radioactive particles are going to continue to move in the atmosphere and they may move for many miles before they settle on the ground or on surfaces on the ground. Those particles that are out, you know,



let's say 20 miles if you were to be there inhaling the air, your danger is not from inhalation. You're going to be exposed to levels of radiation that are last thing you get exposed to during the course of a normal year doing all the things you normally do. So the danger isn't that you are breathing in radioactive materials but all of those materials are ultimately going to settle. There is a longer ....there is an inhal..ingestion, sorry, there is an ingestion danger that is a danger that comes from much longer term exposure. So that you know if we have a ...I'll tell you what. Let me do this..I'm going to change slides and let me this one..so let me explain what you are looking at. This was this is a slide from a drill that we conducted at Pilgrim Nuclear about.... I was going to say two years ago-2010. See the orange? In this drill, we had a release from Pilgrim that went on for a number of days. We evacuated this area of the EPZ immediately. Once we got outside of the EPZ, so all of this area we did not evacuate. Now what happened if... if this happened tomorrow? What we do is in partnership. We have some state teams and we bring in federal teams that both ground teams and air teams. And as soon as there is a release, between the state and the federal government, and this would be true in any state in the country, from both air and ground there are a lot of assets that are dedicated to measuring radioactive levels in the air and on the ground. What we would do over the course of ..it may be one day, two days, three days, four days, is we would map out the areas that have radioactive materials that have settled to the ground at levels that pose an ingestion danger. So in this exercise, the orange area which extended out, I believe, 50 miles all the way into Rhode Island. This orange area is the area and you can tell which way the wind was blowing. This orange area is the area where in the exercise radioactive materials were found at dangerous levels on the ground. (42:23)Now, people that are in this area are at risk of ingestion danger which is a long time...this comes from a long time exposure. It does not come from having been in there for an hour, two hours, three hours, a day. It comes from, but there is a very significant and deadly risk from long term ingestion of radioactive materials. So, if this were our incident, what would we have done as the state? In the immediate hours we would have worked to evacuate people that were within 10 miles to minimize the inhalation risk. Over the next number of days, we would have mapped this area and once we had identified this area we would then issue a relocation order and order anyone within this area to leave the area. And we would enforce that order. This is not an evacuation. An evacuation is an emergency quick get out of town order which says get in your car and get the hell out of town because there is an imminent danger. This is not an evacuation. This is a relocation. It is not urgent. We have the time to plan it and what we did in this drill and what we would do in real life is identify all the roads and major roads. We will work with local and state police and the depart of transportation. We would seal off all the roads in and out. We would send people into these areas with protective

clothing and help everybody relocate out. We would move animals and anything living we would move out. And the unfortunate reality which is what Fukushima faces today, is that this area may well be closed to anyone for years to come.

(44:45) But what I want to make clear to you so let's go back to the first map. So let me bring this back to the Cape. I am almost done with the science and now I'm going to start talking about traffic problems. But the science dictates how we are going to approach your traffic problems. So in a release, and let's assume we have a south southeast wind blowing this way and it is a release that is significant and goes on for an extended period of time. We're going to...if we're going to work... our phase one is to protect the people within 10 miles from the inhalation danger. That's our immediate concern. It's our first priority and that is we will hopefully be able to evacuate them before the release. We may need to shelter some people in place until we can evacuate them but our first priority is to get them more than 10 miles away so that they're not at inhalation risk. What about as all of that is going on we will be mapping from the ground and the air where the radioactivity levels are, what the radioactivity levels on the ground and fixed objects and we will carefully map out the danger area. This is the area in which there is an ingestion danger. Once we do that, in coordination with local officials, we will issue a relocation order and mandate that anybody within that ingestion pathway area relocate out. Now, let me be real clear. That would...by the time we're doing this, this area is empty. There is nobody left up here. Your Cape Cod bridges no longer have any traffic. You know, your bridges are not being impacted by people trying to evacuate Pilgrim because this relocation order is not going to take place on day one or day two.

(47:12) Now, let me then talk about what does this all mean in terms of traffic, traffic management, traffic mitigation, traffic concerns. Because this is a key area. Let's assume that we have.... you know, the sirens go off and you all may know the area all areas within 10 miles of the plant have sirens. When those sirens go off that's our warning to the public that something bad may happen or is happening at Pilgrim. The reality is in .....and there aren't a lot of significant releases from nuclear power plants in the world for us to study and rely on. The likelihood is that if Pilgrim declared an emergency that in..... most likely that we're not go from the first signs of an emergency to a release within a matter of minutes or even hours. Most scenarios that the experts come up with tell us that it is most likely that between the time we are first told there is an emergency and a release there's going to be hours or even days. But what did I tell you? We plan for the worst and hope for the best. So for planning purposes we assume that the time between being told of an emergency and the time of a release is going to be very short. So, there is an existing now almost 10 year old traffic evacuation plan for the EPZ. This was something something as is required that the plant funded almost 10 years ago. It is the document

that the communities and the state work with and how we manage an evacuation. That plan is being rewritten because it is 10 years old and it has to. That is being redone as we speak. **That is a plant funded planning process using a contractor hired by the plant.** Some of you have probably seen that work. The first or initial draft to the report and it is by no means ready for prime time. That draft has gone to all the EPZ communities for comment. Some have found significant problems with the draft and have commented back to the plant. And others have said...other communities have said from their perspective it's perfectly fine. But it is in the process but the point is that there is and will soon be a new evacuation plan for this area. If you look at that plan and assume the worst case scenario which is a very quick moving disaster in which the public has very little time to slowly evacuate. So we go from an emergency to an evacuation order very quickly on at the worst time of day which is I think 5 o'clock on a weekday is the worst time according to the traffic plans. So, you know, let's just.... so the worst case scenario the evacuation is ordered very quickly at 5 o'clock on a Wednesday afternoon during when it's not summer. So the most number of people are within the EPZ. **The current plan, the draft plan right now tells us that it will take about 6 hours to evacuate the bulk of the people from the entire EPZ. And again, this is the worst case scenario where we're evacuating all of the EPZ not a portion of it and it is a very sudden evacuation. So when we look at the models that are in draft form, this evacuation is going to take about 6 hours.** Now how does that evacuation work? (52:12) From a point right around here which I think is Route 44 I believe. I am looking at John, right? From a point right around here, the evacuation works by pushing people from here south. We push them to evacuate to the south. Now this is not an area that has a lot of major arteries. We don't, you know, we have to work with what we have so we have Route 3. I think this is...What is this? Old Route 3? Ya, old Route 3, 3A. So from here to the south, we are being....we are pushing people to travel south towards the Sagamore Bridge. If you're from this point north we're pushing people to the north or to the west down 44. But of concern to you folks on the Cape is that we, for those first 6 hours or so, are pushing lots of people south right towards the Sagamore Bridge. Now what's our priority and the models tell us that before we even think about Cape traffic, if we just think about the Pilgrim, the traffic within the 10 miles we know, and this should be no shock to any of you, that we're going to have two major bottlenecks. And where are they? Around the Sagamore Bridge and around the Bourne Bridge. Because what are we doing? We are pushing these people south on 3A and 3 down towards the bridge. We're pushing them across to 495 and then back out 495. So that we know that 4 up to 6 hours we got a real traffic problem and the bottleneck which is going to slow down this evacuation are these two choke points which are the same two choke points you deal with every Sunday and all summer long and frankly last year when bridges are out of

service every day of the week. So those are the choke points and that assumes no traffic leaving the Cape. So if we added into the equation people trying to get off the Cape, what happens? What happens is that we already....is that the more people that try to leave the Cape during this emergency evacuation which is going to be a maximum of six hours, the more people that try to get off the Cape the harder it is for us to move these people out of the inhalation danger. So the planning assumptions the planning fact that we have to work with is that the more that we facilitate people leaving the Cape who are not at imminent risk of inhalation, from inhalation, the more we allow the Cape traffic to leave in those first 6 hours, the greater the risk we are putting these people that who are in the inhalation risk zone.

(55:40)So as we start to think about the Cape we have to accept, I believe this is a planning assumption, we have to accept that in the immediate hours of a release while we are trying to evacuate people who are at risk that the people who are on the Cape are not our priority because you are not at risk in those first hours. Now we're going to come back to what does that mean? But that's a planning assumption. It's a very hard one if you are on the Cape saying last place, you know, ok I hear there is something going on at Pilgrim and I am down here in Harwich. I know what I want to do. I going to visit to Mom who lives up in Boston. I want to get off the Cape because I just don't like the sound of this. I get that. But the science and the facts tell us that in fact if we can talk to you and say you know what? Stay where you are for 6 hours and help us evacuate this area that that is how we ought to approach it. So .....what do we suggest? Well, what else do we know? And I started to elude to it. We know that as we order.... once we know that, once it becomes public that there is any emergency at Pilgrim, people outside of the EPZ are going to try ....some number of people are going to try to get away from the area. Whether they are at risk or not, we know it is human nature. As I said, if I'm in Harwich or if I happen to be on the Vineyard, I'm thinking should I get out of here? Wouldn't I be safer in Detroit at my mother's house than sitting here on the Vineyard? Maybe. So I 'm going to start thinking, how do I get out of here? I know that lots of people, once we know that there is an emergency at the plant, who on the Cape are going to start thinking, I want to leave and are going to, I use the expression, self-evacuate, meaning you're going to make some amount of people are going to make a decision I want to leave even though I have not .....an evacuation has not been ordered. That's not just people on the Cape but if I am sitting up here in Plympton which is outside the 10 miles, I'm going to do the same thing. But obviously it is a very different circumstance because if I am in Plympton, I've got all sorts of ways to get out of town and I don't have to drive towards the danger zone. If I'm any where on the Cape and want to drive off of the Cape, there are two things that we have to recognize. One, it's going to exacerbate our traffic problems around the evacuation. So it's going to

compromise the evacuation. And second, it is going to require people to drive towards the area in which there is an inhalation danger. Now the ten mile zone is there. You can get off of the Cape without going into it 10 miles. But we need understand that our, you know, what our first reaction is going to be. 'Let's get out of Dodge' may not be our best reaction. Our best reaction may be 'Hey, maybe I ought just stay in Harwich for the night. If I'm in, you know, I'm better off here than here. I'm not in inhalation danger here and you know what? I understand these people are at risk and I gotta help them evacuate.'

( 59:36) So....that being said what do we need to do and what does MEMA want to pledge to do? As I said two things that I think we ought to go to work on right away in partnership with the REPC. One is how do we manage the traffic? How do we manage and deal with those people who, without an evacuation order, are going to get on the road and say I'm going, I'm getting off the Cape? We know and you know how bad a situation is it going to be? Well, it depends on a lot of things including what time of year this happens. What's my nightmare? It's the same one I have in August around hurricanes. It's about August 15th weekend...is you know if a beautiful Aug 15, a beautiful Sunday after 3 gorgeous days right around August 15 is my worst case scenario for a hurricane and for this scenario. Why? Because we get more people on the Cape and Islands that on any other day of the year. So, that's my worst case scenario. So obviously the traffic depends on when this happens, time of year, weather, and a lot of factors. But we need to figure out how to manage that traffic. And second, we need to figure out how to better communicate with local officials and the public to try to convince people not to self-evacuate and to stay put and follow the directions of public safety officials. Those are our two challenges. On the traffic front there are some things that we need to do. We have to figure out ...so let me.....the current traffic plan that exists today and there is a lot of .....bunch of people in the room are gonna nod and there was some bad press ....well some confusing press stories around this and MEMA was at fault for some of this. The current plan, recognizing this problem, apparently uses the word that the public should be discouraged from traveling beyond Route 2.. exit 2, you know, people traveling down... up route 6 should be discouraged from continuing beyond exit 2 and going over the Sagamore Bridge- discourage. Well, I am hoping the new plan is going to be much clearer but we have to work on this. I will tell you what my opinion of this. My opinion is that if an emerg..if an evacuation is ordered of the EPZ that we need to put traffic control points along Route 6. We also have to worry about 28 and some of the other roads but let's focus on Route 6. We need to put traffic control points on and we need to monitor traffic very carefully. By most importantly we need to monitor traffic that is evacuating. If we find that the evacuation is being bogged down around the Sagamore Bridge to the extend that it is compromising the public health of people trying to evacuate, then the traffic

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control points that are at exit 2 need to have the discretion to prohibit traffic from passing beyond exit 2 and going over the Sagamore Bridge. It does not make sense to take people who are not at danger and have them compromise the evacuation of people who are at danger. **So now we need to deal with the possibility that we may need to prohibit traffic from leaving the Cape, particularly over the Sagamore Bridge, for a period of time which might be as long as 6 hours.** Once we get to 6 hours, this bottleneck goes away and we'd be able to facilitate traffic going over the bridge. Now what about the Bourne Bridge? Can we move traffic from 6 to 28 and then off the Bourne Bridge during those first 6 hours, during the evacuation. Well, there are a couple of things we need to do. As the chief alluded to we have a Cape Cod Emergency Traffic Plan that we activate for hurricanes and there's a number of things in there that we need to look at, I think, to incorporate into our Pilgrim our nuclear traffic plan. One of them is that we open up the MMR so that we can move traffic from 6 to 28 across the MMR because as you know normally it's very hard to go from 6 to 28. There aren't a lot of ways to do that and with any traffic it's just, everything would come to a standstill. So what we need to look at that as an option is opening up the MMR. But the same planning assumption needs to, I think, needs to be there which is if we look at the Bourne Bridge and if we see that it is bottlenecked to the degree that evacuation is compromised at the Bourne Bridge, then **we might have to close both bridges for a period of time.** Now, everybody on the Cape when we think about hurricanes lives with this reality that at 70 mph sustained winds we close the bridges. All of us who live or visit on this side of the canal understand that. So this is another one of those scenarios in which we may need to live with the reality that we need to close the bridges to off Cape traffic with the exception obviously of emergencies and we can figure..and there's no problem with building in a system in which if we have to move people to hospitals, there are emergencies we can get cars over where we need to. This is not like the hurricane where the bridges are simply unsafe to pass. So we'll build that in but we may need to live with the fact that up to 6 hours people are not going to leave the Cape. So what do we....but we still have to figure out how to manage the traffic. We still need a plan that says if you are coming down route 6 and we know that we're closed here, does it really make sense to allow people to come all the way to exit 2? Probably not. **You know, I can tell you off the top of my head I'd be looking at diverting a lot of traffic at exit 6 for example. But we need to have a plan of what to do with those people so you are not coming down the road and stuck and sitting there and we have an entire traffic nightmare on the Cape.**

(1:07:13)We have to have a plan that tells –talks about, well, do we turn people around so they can go back where they came? Do we move people over to 28? Do we open up the MMR? You know, in our hurricane plan for people who are stuck on the road, they've left their houses and can't get over the bridge. What



do we do? We open up the barracks at the MMR as a temporary shelter for up to depending on the number of beds and the time of year but we can shelter up to, you know, 5-6,000 people on the MMR. We may need to open the MMR up for people who have left their homes and have come down and for 6 hours they can't get off. What are we going to do with them? We may need to move people onto the MMR where we can shelter, them feed them, clothe them, provide emergency medical care, etc. but we have to have a plan. It's not good enough what you've got right now which is nothing. But the other critical component of this is the public alerting, public messaging component. We will do our job better if we can convince the person that's sitting in Yarmouth, sitting in Chatham, not to get in their car. To tell them, listen, stay put. Now, we know that with that south wind we know in the days to come there is going to be a relocation of people on the Cape. We know that. You are in...you are going to be in harms way. You will be in the ingestion danger zone and you will relocate. But by the time you are relocating, it isn't a problem with the bridges. The evacuation is over. And this can be planned out. We can take the hours to work on where we are moving people and how are we moving them. So I have said probably more that you all wanted to hear. I probably said a few things that some of you are going to want to react to and I understand that. But so I'm going sort of wrap up by saying- Where do we want to go from here? In the days to come, I want to sit down. We're going to do two things. We're going to sit down with Sean and his team and get input into what I've just offered. I've offered some thoughts on how to proceed. It may well be that Sean's team who knows the Cape a lot better than I do and as great planners can say 'Hey, you know what? I think we can tweak those assumption you've been making' or 'I think we can approach this a different way.' That's great. We don't have a plan. What I want to do is put the smart people together that can develop a plan but it's got to be a plan that is built around facts and science that protects the people that need to be protected in the order they need to be protected in. (1:10:25) So I want to start that process. Now, what about the plant? What about the existing traffic plan? The plant is going to continue and to work to finish what is required of them which is the evacuation plan for the 10 miles. What I want to do is create a new plan that, you know the equivalent of the Cape Cod Emergency Traffic Plan which was designed... was not designed for a Pilgrim Nuclear incident. We need to build a new plan or a new annex that talks about how are we going to manage an incident, the traffic, and messaging around an incident at Pilgrim. We are in discussions with the plant to see if they will fund that. I am optimistic but that is not a stumbling block. It doesn't matter whether the plant says they'll fund it or not. We are going to do this and I'm not going to do it by asking every community to pay some money to do this. We'll get this job done if I can get some resources from the plant, hey, that's great. If I don't, believe me, it is not a stumbling block. We've done a lot of things without



private sector paying for them and this is one that we have to get done and we will get it done.

I'll pause and ask Christine and John whether any points which you think I .....additional comments, points. I'm going to let Christine explain.

(1:12;00)

(Q): Explain what the ingestion danger is and you can be present.

(KS)–I am going to let Christine explain that but yes,

(Q): So as explained to us, the ingestion danger is you can be in the presence with the particles but if you actually consume them then your body takes that radiation and concentrates it so you are then in greater danger to radiation but if you are just present it is not a risk for (inaudible)

(KS): Hold on. Ask the chief for directions on how he would like to proceed. It's his meeting so I'm .. whatever you would like to do.

Chief Baker: OK, it's 3:30 and I promised the committee that we'd be out at 4. I'd like to do two things with questions. Many of you are writing notes (inaudible), anything that is in depth or challenging, I ask you to submit it to us in writing and we will direct it to Kurt and will get feedback directly to you or your organization. (inaudible) So at 10 of, I am going to stop the meeting and proceed with public comments for those folks and there are at least 3 people who have identified to me that they wish to make a comment so we will reserve that time. I would like to start with members of the committee. If there are members of the committee that have a question of Kurt, now is a great time for a question.

(11:14:25)

(Q): Am I correct in understanding that if that plume, ingestion plume, say were to cut across Sandwich, Bourne, and Mashpee, to bring people after the period across the area, driving 6 to leave would not (inaudible)

(KS): Well, you know and I just realized I want to get back to Fukushima. There was something I said I would talk to you about and forgot but... In all likelihood we would look to preclude people from crossing that area and stirring up radioactivity that's on the ground. You know, there will be challenges but again that's not something we have to live with, the geography that we were given, so you know, so.. How will we do that? It depends on where the plume is, you know, and, .....but ideally when we do our exercises, when we order a relocation, we close those areas. Now, we also have, we do have, we do have and we do exercise..... What's that John? What do we call it? the plan for... we have plans, a system in which we allow, once we have identified and created the relocation zone, we have plans for how we allow people back in to get, for example, possessions. We have a system to do that. They do it in Fukushima. They do it in Japan. Now so once we relocate people

out of an area because it is not an inhalation danger, we can put people in protective gear and we can put dosimeters on them and let them go back in for a specified period of time and we do that. That's... we exercise those plans. (someone speaks out the word 're-entry') Re-entry, there we go, re-entry plans. Now, let me just ..Fukushima. And the 50 mile order from the state department what was that and what happened in Japan? What did the Japanese government do? Well, one of the unfortunate things is that as Fukushima was happening as the release was threatening and then occurring, there was a .....there certainly was an inadequate flow of information from the Japanese government to the United States government. The United States government did not have the real time data and information to know what the conditions were on the ground, what was happening particularly in those first number of days. The Japanese government, and I don't stand behind their decisions and I don't know on what information they acted, but the Japanese government ordered an evacuation, an inhalation zone evacuation that went out less than 10 miles from the plant. And the NRC tells us, after working with the Japanese government, after the fact ,understand, what they knew and why they made the decisions. The NRC tells us that the Japanese government found the same thing that the NRC expected they find is that the inhalation risk during the release at Fukushima did not extend out even 10 miles. There was an immediate evacuation. It was extended but ultimately less than 10 miles. Now, that was in the first hours and days when the release was ongoing and the inhalation dangers were what they were responding to. As we got out a number days, the United States government, Energy, NRC, were trying to figure out where the ingestion zone, danger zone was.

(1:18:42)

And ultimately in those first days the United States government the NRC concluded we.. they couldn't map out go to the other map, they didn't... the US government did not have the resources on the ground in the day s after Fukushima to do this type of mapping and to identify where the inhalation danger was. This I want you to know that this is 50 miles . When we did this exercise and this was an exercise put together by FEMA and the NRC we actually did a 50 mile exercise. It's because they didn't have the facts and information to do that kind of mapping that several days after the release the US told citizens that if you are within 50 miles, you should get out. It was not out of concern over the inhalation risk, it was over concern of that longer term ingestion risk which is why the united states used a 50 mile.... When explained after the fact that makes sense to at least those of us who are in the business as to why they did it. It has completely clouded the understanding of the public because they hear us say well, we're only evacuating 10 miles an the pubic says wait a minute. In Japan we evacuate up to 50 but we don't do that here? But at least I want you to know where the 50 miles came from and why that is.....and

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why. Now, there are people shaking their heads that are saying, listen I don't believe you or, I got it wrong, and I'm fine with that. All I can do is provide you the information that has been provided to us by the federal government. We're open if the science needs, you know, if the science needs to change our assumptions, we're open to that but. So let me go back to the question because there is an important piece I forgot.

(1:20:49)

(Q>) I'm from the government too so I know where I stand about this but .... I know there are a lot of variables going on when you ..... these ingestion zone areas occur. (inaudible)

(Q)What is the earliest possible amount of time we're going to see one of these ingestion zones might occur?

KS:Let me give you an answer and I'll let Christine and John add on. As soon as and again you know one of the disadvantages we have is that everything I am saying to you is based on how we train and exercise because I'm hoping that none of us in our lifetimes ever do this. But we are trained and how we exercise is that as soon as we perceive that there is a risk of a release from a plant, we request assistance from the federal government and we do a couple things. We immediately deploy we have several state teams who are..that are designed and equipped to do this type of monitoring to identify where the plume is in the air and where the radioactivity is on the ground. We deploy those right away. Those are state resources. We immediately request from the federal government additional monitoring tracking resources and those come in the form of ground crews and very sophisticated airplanes. We would also request from our neighboring states that have power nuclear plants their ground crews. So we would begin within just a matter of hours of a threatened or actual release. We would start doing the mapping. The federal resources and the planes may be 12 to 24 hours out before they're actively working. So you know my answer is we start building that map within hours of the start of the release but it may, you know, depending on the variables, it maybe 24 hours before we can start saying with any great degree of certainty, this is what it's starting to look like so it isn't instantaneous but we have the resources. Our state NIAT- Nuclear Incident Assistance Team- we have NIAT teams we'll deploy right away and then we have a lot of federal resources that can be 12-24 hours out. Anything to add to that, John or Christine? (inaudible)

(1:24:35)

KS: Because we have three EPZs in this state, Pilgrim, Seabrook, and VY, that means that every year MEMA as a state agency has to undergo two practice exercises and a graded exercise of all of these capabilities. Pilgrim communities do this every three years. We have three plants. So as a state

agency we do this as two full practice exercise and graded exercise every single year. We're right now we have a practice exercise number 2 for Pilgrim next week and the graded exercise coming right around the corner. So we exercise this more than other thing, any other hazard we exercise responding to is the one I hope we actually never ever have to do but we practice it a lot.

(Q BCREPC director Chief George Baker) Kurt, is there any fixed monitoring in Wellfleet or Provincetown or anything? My concern being time, distance, and shielding. There's no shielding. I mean, there's the bay. (KS-'Right"). A lot of our data comes from military tests in Nevada and Utah (inaudible) and not over the ocean. And if there isn't, would you consider working with us? Is there a benefit to that, and most of our delegation is with us today. Here we're partners but we hear from our group that that is a concern and how do we go forward?

(KS)Well, the short answer is that there is no real time monitoring facilities outside of the plant, on the plant, on the grounds of the plant itself there is. Now, that's different than up in Seabrook in which there is a real time, well, I'm not sure if real time or semi real time, monitoring network around Seabrook including the map within the Massachusetts portion of the EPZ. That I don't have an opinion on the value pro or con of the monitoring at least as it's done around Seabrook, There are people and experts who passionately believe that that real time system is a great public safety enhancement and what we need to do is build it out more and make it more real time so that we're getting more data with sort of instant wireless transmission. There are also people around Seabrook and both experts and non-experts who believe that it is not a particularly useful networking system. I don't have an opinion. I certainly would join in and be happy to be a part of discussions to look at the feasibility of a real time monitoring system if we could all reach the conclusion that it would be money well spent meaning valuable information but I don't have an opinion on the value.

(inaudible)

(Q)(1:28:15)

In Nuclear plan A where you've got an evacuation.

You've got it so that the residents who live in Falmouth stay in place. I'm just wondering if you have a plan B in case some sort of event happens during an actual disaster (inaudible)?

(KS)Well, I'm always a proponent of having a plan B and a plan C and ya, the sort of, we oughta, I think we take the first step and start doing this planning and then when we get there we can then begin to challenge ourself, well, what happens when we have the hurricane that causes the incident and confluence of

different factors and we ought to challenge ourselves to what plan b and plan c ought to be but we've got to start with plan A. I think you're right.

(Q Rep. Viera) Will this committee have a formal seat with the state committee on the process around evacuation or the other way around and the state is going to have (inaudible)?

KS I'm sorry. I misinterpreted I thought you were making a commitment to work and plan with us. So let me speak to Bourne and the town of Bourne through various channels has written letters to the NRC recently and one of their requests from the town of Bourne which certainly equally applies I think to the town of Sandwich is once the planning, you know, planning is one thing. When we go operational, if when we declare a level of emergency and we stand up our emergency operation centers, I think it makes a lot of sense that the communities that have to manage the worst of those impacts which you know certainly start with Bourne and Sandwich, need to be in on the operational side, need to be in our EOCs to help manage, from an operational standpoint, the incident. So yes, I'm making a commitment that we are not only going to plan together but we have to operate together and that to me is sort of an easy one. And so if that's what you were asking, and I'm glad it was representative for clarify it, absolutely.

(1:31:56)

Chief Baker: All right, one or two more questions. We are running out of time. Any other members of the committee? Any of the elected officials that are present?

(Q):inaudible

(KS):Yes, and funny you should ask because, what's today? Wednesday. There exists today a number of communications tools, that we at the local regional and state have to communicate with the public. On Friday, the governor, and I don't want to steal his thunder, but two days from now barring any kind of unforeseen circumstances, the governor will make an announcement that we are launching yet another new tool. And we're going to starting Friday start driving, urging, I guess urging the public to download a free app. How many of you own a iphone or android smart phone? Just raise your hands, Higher so I.. OK. And how many are you owners of a Blackberry smartphone. So, now, so the governor will announce on Friday that if you are an owner of an iphone or an android smart phone that there is going to be a free app that you can download. So that on a 24/7 basis, MEMA will be able to send you real time information and we will do it by it's called geofencing (?) We will draw a box on a map and any smartphone that has the app that's in that box will get text message, image files, text files, audio messages, from MEMA. So that's going to be the newest tool. Blackberry users, that app will be available around the first of the year. So that's the newest tool we are adding and we're going to put

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a lot of, we're really going to try to push people to that. There are a lot of other tools out there that we , it's very easy to connect us to all the reverse 911 local and regional reverse 911 systems that already exist. Mass 211 if you ever are faced with a public emergency and don't know what to do but it's 'not an emergency for you to call 911, call 211 24/7. There's a person there that will provide you information or tell you how to get information. There's a variety, the radio stations... we use radio stations for the the Cape Cod Emergency Traffic Plan. Designated stations will have to build the same thing for this plan. So we have systems now. We're about to take a giant step forward in another two days. I urge people to have NOAA crank or battery weather radios. We push information through that system. The scrolls that come across your tv the EAS ALERTS we push those right out of MEMA there ara a lot of systems out there. But what we have to do is tell the public make sure the public knows where they are. We do this, we have a plan. We communicate directly with every household within the EPZ. We have to talk about how we get that information to the people on the Cape. So that's going to be part of the plan.