

RELEASE IN PART B6

From: Sullivan, Jacob J <SullivanJJ@state.gov>
Sent: Wednesday, March 16, 2011 9:21 AM
To: H
Subject: Fw: Synopsis of what is new to cause increased concern

Fyi

----- Original Message -----

From: Holdren, John P. [mailto: [REDACTED]]
Sent: Wednesday, March 16, 2011 09:16 AM
To: Steinberg, James B; Shapiro, Nicholas S. < [REDACTED] >; Brennan, John O. < [REDACTED] >; Daniel.Poneman < [REDACTED] >; Daniel.Poneman < [REDACTED] >; Roos, John; McDonough, Denis R. < [REDACTED] >; Avery, Heidi E. < [REDACTED] >; Reed, Richard A. < [REDACTED] >; Kern, Dab < [REDACTED] >; Hammer, Michael A; Sullivan, Jacob J
Subject: Synopsis of what is new to cause increased concern

Colleagues --

As clarification for what is behind the greatly increased concern evident in the four points distributed to us by NRC this morning, I offer here for internal use only my reading of what has changed overnight, based on the 630 am EDT "Status Update" from the NRC's Emergency Operations Center.

Water levels in the spent-fuel storage pools at Fukushima Dai-ichi Units 1,2, and 3 are now reported to be falling. At Unit 4, total loss of water from the spent-fuel pool has been reported. It is being reported that the zirconium cladding of the fuel is already burning (to an extent unknown) in the spent-fuel pools at both Units 3 and 4. (Note that the jargon "zirc interaction" in the NRC update means the stuff is burning.) High radiation levels are making it extremely difficult for safety workers to deal with the situation.

My interpretation: Burning of the zirconium cladding on fuel exposed to the air (as in these spent-fuel pools in buildings that lost their integrity due to hydrogen explosions) will lead to large releases of fission products to the atmosphere. Complete destruction of the fuel and the release of a large fraction of its contained radioactivity would be expected to occur over a period of several hours -- say, between 3 and 12 -- once large-scale burning has commenced. These releases would not be attenuated to the extent expected for releases from a reactor core after containment failure; they could approach or even exceed the quantity of radioactivity released at Chernobyl. This is because each spent-fuel pool contains the equivalent of one or more complete reactor cores. While the short half-life component of the radioactivity that was present when the fuel was in the reactor has decayed away after the fuel has been in the spent-fuel pool for some weeks, the longer-half-life radioactivity (such as cesium-137, 30-year half-life, and strontium-90, 28-year half life) is virtually all still there.

I have checked my interpretation in the past few minutes with my friend Dr Robert Budnitz, the former head of Nuclear Regulatory Research of the US NRC who was in charge of the internal investigation at TMI. He is currently at a national meeting on reactor-safety issues with GE engineers and others in Wilmington, Delaware, where the course of the accident in Japan is under intensive discussion. Although the responsibility for any errors in the above is mine, I am confident that what I have said above comports with Budnitz's professional judgment as well as my own.

John

JOHN P. HOLDREN

B6

Assistant to the President for Science and Technology and Director, Office of Science and Technology Policy Executive Office of the President of the United States email [redacted] assistant Karrie Pitzer [redacted]

-----Original Message-----

From: Steinberg, James B [mailto:SteinbergJB@state.gov]

Sent: Wednesday, March 16, 2011 8:32 AM

To: Shapiro, Nicholas S.; Gregory.Jaczko [redacted] Holdren, John P.; Chris.Miller [redacted]; Brennan, John O.; Daniel.Poneman [redacted] Roos, John; McDonough, Denis R.; Avery, Heidi E.; Reed, Richard A.; Kern, Dab; Hammer, Michael A; Sullivan, Jacob J

Cc: Michael.Weber [redacted]; Martin.Virgilio [redacted]; Bill.Borchardt [redacted] Brian.McDermott [redacted] Nader.Mamish [redacted]

Subject: Re: 4 points on protecting us personnel and actions needed for Dai-ih reactor

We need a process to discuss, including interaction with Japanese government

----- Original Message -----

From: Shapiro, Nicholas S. <[redacted]>

To: Jaczko, Gregory <[redacted]>; Holdren, John P. <[redacted]>; Miller, Chris <[redacted]>; Brennan, John O. <[redacted]>; 'Daniel.Poneman [redacted]

<Daniel.Poneman [redacted] Roos, John; Steinberg, James B; McDonough, Denis R.

<[redacted]>; Avery, Heidi E. <[redacted]>; Reed, Richard A.

<[redacted] Kern, Dab <[redacted]>; Hammer, Michael A

Cc: Weber, Michael <[redacted] Virgilio, Martin <[redacted]>; Borchardt, Bill

<[redacted] McDermott, Brian <[redacted]>; Mamish, Nader <[redacted]

Sent: Wed Mar 16 08:28:14 2011

Subject: RE: 4 points on protecting us personnel and actions needed for Dai-ih reactor

Just so folks know what is public, etc. Are those four points going to be made public from the NRC or just point number 3? And the other 3 points are internal guidance to the USG?

-----Original Message-----

From: Jaczko, Gregory [mailto:[redacted]]

Sent: Wednesday, March 16, 2011 8:17 AM

To: Shapiro, Nicholas S.; Holdren, John P.; Miller, Chris; Brennan, John O.; 'Daniel.Poneman [redacted]

'roosj@state.gov'; 'SteinbergJB@state.gov'; McDonough, Denis R.; Avery, Heidi E.; Reed, Richard A.; Kern, Dab; 'HammerMA@state.gov'

Cc: Weber, Michael; Virgilio, Martin; Borchardt, Bill; McDermott, Brian; Mamish, Nader

Subject: Re: 4 points on protecting us personnel and actions needed for Dai-ih reactor

#1 is recommendation of nrc to usgov

#2 is a statement to be communicated by us to japan

#3 would be a public statement

#4 is nrc recommendation to us gov

----- Original Message -----

From: Shapiro, Nicholas S. <[redacted]>

To: Holdren, John P. <[redacted]>; Miller, Chris; Brennan, John O.

<[redacted] Jaczko, Gregory; 'Daniel.Poneman [redacted] <Daniel.Poneman [redacted];

'roosj@state.gov' <roosj@state.gov>; 'SteinbergJB@state.gov' <SteinbergJB@state.gov>; McDonough, Denis R.

<[redacted]>; Avery, Heidi E. <[redacted]>; Reed, Richard A.
<[redacted]>; Kern, Dab <[redacted]>; 'HammerMA@state.gov'
<HammerMA@state.gov>

Cc: Weber, Michael; Virgilio, Martin; Borchardt, Bill; McDermott, Brian; Mamish, Nader
Sent: Wed Mar 16 08:08:17 2011
Subject: Re: 4 points on protecting us personnel and actions needed for Dai-ih reactor

Number 2 is not an action for amcits and number 4 is difficult to communicate, are we saying don't evacuate yet but get ready to because we might make that recommendation soon if things continue to deteriorate? And state would likely need to add what preparations amcits should be making

----- Original Message -----

From: Holdren, John P.
To: Miller, Chris <[redacted]>; Brennan, John O.; Jaczko, Gregory <[redacted]>;
'Daniel.Poneman' <[redacted]> <Daniel.Poneman' <[redacted]>; 'roosj@state.gov' <roosj@state.gov>;
'SteinbergJB@state.gov' <SteinbergJB@state.gov>; McDonough, Denis R.; Avery, Heidi E.; Reed, Richard A.; Kern, Dab;
Shapiro, Nicholas S.
Cc: Weber, Michael <[redacted]>; Virgilio, Martin <[redacted]>; Borchardt, Bill
<[redacted]>; McDermott, Brian <[redacted]>; Mamish, Nader <[redacted]>
Sent: Wed Mar 16 07:56:00 2011
Subject: RE: 4 points on protecting us personnel and actions needed for Dai-ih reactor

Chris --

Can you please clarify the status of the attached points: under consideration? about to be issued for USG officials? about to be made public?

Thanks,
John

JOHN P. HOLDREN

Assistant to the President for Science and Technology and Director, Office of Science and Technology Policy Executive
Office of the President of the United States email [redacted] assistant Karrie
Pitzer [redacted]

-----Original Message-----

From: Miller, Chris [mailto:[redacted]]
Sent: Wednesday, March 16, 2011 7:29 AM
To: Miller, Chris; Brennan, John O.; Jaczko, Gregory; 'Daniel.Poneman' [redacted]; Holdren, John P.; 'roosj@state.gov';
'SteinbergJB@state.gov'; McDonough, Denis R.; Avery, Heidi E.; Reed, Richard A.; Kern, Dab; Shapiro, Nicholas S.
Cc: Weber, Michael; Virgilio, Martin; Borchardt, Bill; McDermott, Brian; Mamish, Nader; Miller, Chris
Subject: 4 points on protecting us personnel and actions needed for Dai-ih reactor