

VICE ADMIRAL GAFFNEY: WELL, LET'S SEE WHAT
2 HAPPENS HERE. LET ME START OUT BY TELLING YOU ABOUT
3 WINSTON CHURCHILL. HE SAID THERE WERE THREE VERY
4 HARD THINGS TO DO IN LIFE: ONE WAS TO CLIMB A
5 MOUNTAIN THAT WAS LEANING TOWARDS YOU; THE OTHER WAS
6 TO KISS A GIRL WHO WAS LEANING AWAY FROM YOU; AND THE
7 THIRD WAS TO DELIVER A PRESENTATION AFTER LUNCH,
8 EXACERBATED BY THE WEATHER AND NOW THE ELECTRONICS.
9 SO RICK SPINRAD TOLD YOU MY WHOLE LIFE HISTORY.
10 I'VE HAD LOTS OF JOBS. I'VE HAD LOTS OF TITLES. NOW
11 I'M A PRESIDENT OF A UNIVERSITY. SO I WILL ANSWER TO
12 ANYTHING, AS YOU MIGHT SUSPECT. WHAT HE DIDN'T TELL
13 YOU WAS THAT MONMOUTH UNIVERSITY IS IN NEW JERSEY;
14 AND WITH THAT IN MIND, YOU'LL KNOW WHEN WE GET TO THE
15 QUESTION-AND-ANSWER PART OF THIS THAT YOU CAN ADDRESS
16 ME IN ANY TONE YOU'D LIKE.

17 (LAUGHTER)

18 LET ME START OFF BY SAYING THE FIRST SLIDE
19 YOU'RE GOING TO SEE IS A FORMAT FROM THE CNA
20 CORPORATION, WHICH DID THIS STUDY ON NATIONAL
21 SECURITY AND CLIMATE CHANGE. THIS IS AN ADAPTATION
22 OF THAT. SO WHEN YOU SEE THE LOGO AT THE TOP OF
23 EVERY ONE AND THEIR LITTLE CATCH PHRASE AT THE
24 BOTTOM, THAT'S THEIRS. THIS SPEECH, THIS
25 PRESENTATION HAS LARGELY BEEN GIVEN IN A FEW OTHER
0171

1 PLACES. HERE IT IS. BUT I'VE ADAPTED IT A LITTLE
2 BIT TO ADD TO MY OWN SPIN AND HOPEFULLY FOR THIS
3 AUDIENCE. BUT YOU'LL BE HAPPY TO KNOW THAT THERE IS
4 NOT ONE X-Y PLOT IN THIS WHOLE 24 OR 25 SLIDES. AND
5 THE STRAIGHT MEN TODAY FOR THIS PRESENTATION ARE
6 RALPH CICERONE, SANDY, AND RICHARD. THEY ALL SAID
7 THINGS THAT WILL PLAY INTO THIS; AND THAT IS VERY
8 IMPORTANT, I THINK.

9 SO LET'S GET GOING HERE. I DO HAVE TO GET TO ONE
10 GRAPHIC I'D LIKE TO SHOW YOU BEFORE THE LIGHTS GO
11 OUT.

12 SO THE PURPOSE OF THE STUDY: IF THE TRENDS --
13 NOW WE'RE TALKING ABOUT CLIMATE CHANGE TRENDS --
14 CONTINUE, IF THEY CONTINUE, WOULD THEY BE ADVERSE,
15 ADVERSE AROUND THE WORLD? AND IF THEY ARE, WILL
16 THOSE TRENDS AFFECT OUR PARTICULAR PART OF WORLD AFFAIRS;
17 FOR A BUNCH OF FOLKS THAT ARE IN THE NATIONAL SECURITY
18 BUSINESS? AND THEN, IS THERE SOMETHING THAT WE
19 PARTICULARLY CAN DO, AS MEMBERS OF THE NATIONAL
SECURITY COMMUNITY? THERE ARE MANY COMMUNITIES THAT

20 MAKE THAT UP BY THE WAY: DEFENSE, INTELLIGENCE,
21 DIPLOMATIC CORPS, BUT THERE MAY BE OTHERS DEPENDING
22 ON YOUR DEFINITION. IT IS A LARGE COMMUNITY.

23 AND HERE'S THE COMPOSITION OF THE STUDY. I
24 THINK IT IS REASONABLY INTERESTING: SHERRI GOODMAN,
25 A LAWYER, FORMER EPA REGIONAL DIRECTOR IN NEW ENGLAND
0172

1 AND FORMER DEPUTY UNDERSECRETARY OF DEFENSE FOR
2 ENVIRONMENTAL SECURITY IN THE CLINTON ADMINISTRATION.
3 THIS IS A STAFF OF HIGHLY EDUCATED, BOTH
4 ENVIRONMENTALLY EDUCATED AND POLITICALLY EDUCATED
5 FOLKS, AND AN ADVISORY BOARD OF 11 OLD MIDDLE-AGED
6 MEN, RETIRED FLAG AND GENERAL OFFICERS. THERE WAS A
7 REVIEW PANEL AFTERWARDS, PEOPLE THAT YOU WOULD KNOW,
8 GREAT FOLKS LIKE BOB FROSH, ET CETERA, ON THERE. AND
9 THEN WE RECEIVED BRIEFINGS FROM SCIENTISTS, FROM
10 GOVERNMENT OFFICIALS, ALL KINDS OF GOVERNMENT
11 OFFICIALS, AND A PERSPECTIVE FROM INDUSTRY OVER A
12 SEVERAL-MONTH PERIOD.

13 I THINK IT MIGHT BE INTERESTING FOR YOU TO
14 SEE WHO THIS MILITARY ADVISORY BOARD WAS . I WOULD SAY WE
STARTED OUT AS SKEPTICS AND NOT UNIFIED IN OUR VIEWS, BUT CAME
TOGETHER TO AGREE IN

15 THE FINAL RECOMMENDERS OF
16 THIS REPORT. LET ME JUST GO THROUGH THESE QUICKLY.
17 THEY ARE SOME PRETTY TOP-RANKING FOLKS EXCEPT FOR
18 MAYBE THE FOURTH NAME DOWN, MINE:

19 GENERAL SULLIVAN, THE FORMER CHIEF OF STAFF OF THE
ARMY,
20 TRAINED IN POLITICAL SCIENCE, WAS OUR CHAIRMAN, AN
21 ARMY GUY.

22 SKIP BOWMAN, GRADUATE OF DUKE, DOUBLE
23 MASTERS DEGREE FROM MIT, HE FOLLOWED IN THE FOOTSTEPS
24 OF ADMIRAL RICKOVER, AND ADM BOWMAN RAN THE NUCLEAR
NAVY FOR
25 EIGHT YEARS, ARGUABLY THE BEST-RUN NUCLEAR PROGRAM OF
0173

1 ALL TIME IN ANY COUNTRY -- YOU PICK IT, IT'S BETTER,
2 HE RAN IT.

3 LARRY FARRELL, LOGISTICIAN FOR THE AIR FORCE, AN
4 ENGINEER.

5 MYSELF, RAN ONR AND NDU, AS YOU HEARD.

6 PAUL KERN, THREE ENGINEERING DEGREES,
7 TEACHING AT WEST POINT, DID ALL THE PROCURMENT AND
8 LOGISTICS FOR THE ARMY.

9 JOE LOPEZ, A POLITICAL SCIENTIST AND A

10 FINANCE EXPERT, WAS THE HEAD OF THE U.S. NAVY IN
11 EUROPE.

12 DON PILLING, THE NUMBER TWO GUY IN THE NAVY
13 WHEN HE WAS ON ACTIVE DUTY, NAVAL ACADEMY GRADUATE,
14 DOCTORATE IN APPLIED MATHEMATICS FROM CAMBRIDGE IN
15 THE UK.

16 ADMIRAL JOE PRUEHER, WHOSE HOME WAS ABOUT 40
17 MINUTES FROM HERE BY AIRPLANE, IN PEARL HARBOR, WAS
18 THE COMMANDER OF ALL FORCES IN THE PACIFIC, OF ALL
19 SERVICES, BUT ALSO WAS OUR AMBASSADOR TO CHINA,
20 PRETTY BRIGHT GUY.

21 MANY OF YOU MAY KNOW DICK TRULY, ASTRONAUT,
22 HEAD OF NASA.

23 CHUCK WALD, WHILE THE DEPUTY IN EUROPE WAS
24 REALLY IN CHARGE OF MOST OF THE MILITARY POLITICAL
25 AFFAIRS FOR AFRICA AS THE DEPUTY THERE.

0174

1 AND THEN THERE'S ONE MARINE, THE FAMOUS
2 TONY ZINNI, WHO HAS BEEN A VERY OUTSPOKEN CRITIC OF
3 THE WAR AND KNOWS QUITE A BIT ABOUT THAT PART OF THE
4 WORLD, TRAINED AS A POLITICAL SCIENTIST.

5 SO YOU CAN SEE THERE'S QUITE A WIDE RANGE
6 OF FOLKS.

7 WE ESTABLISHED FOR OURSELVES SOME
8 RULES OF THE ROAD, THERE BEING ALL CHIEFS AND NO
9 INDIANS IN THE ROOM. WE STARTED OUT, I WOULD SAY
10 COLLECTIVELY, NOT EVERYONE, A LITTLE BIT SKEPTICAL
11 ABOUT THE EVANGELICAL NATURE OF THE SCIENTIFIC
12 COMMUNITY'S ARGUMENT. REALLY, I WAS THE ONLY ONE IN
13 THE ROOM THAT HAD BEEN EXPOSED TO SOME OF THE X-Y
14 PLOTS THAT WE'VE SEEN HERE TODAY. BUT THESE TOP NOTCH
15 PEOPLE ON OUR PANEL, OF

16 COURSE, READ "THE WALL STREET JOURNAL" AND "THE NEW
17 YORK TIMES" AND "THE WASHINGTON POST" AND WATCH CNN,
18 SO THEY KNEW WHAT WAS GOING ON, BUT THEY STARTED OUT
19 WITH SOME SKEPTICISM AND STARTED TO FOCUS AS WE HEARD
20 BRIEFINGS FROM A NUMBER OF EXPERTS, SOME OF WHOM ARE
21 CO-AUTHORS, AS A MATTER OF FACT IN THIS ROOM,
22 RICHARD, LIKE DR. HANSEN, ET CETERA.

23 WE HAD SOME INTERNAL DISCUSSIONS ABOUT HOW
24 WE WOULD DEPORT OURSELVES; AND IN THE END, WE PRETTY
25 MUCH, 90 PERCENT, AGREED WITH THE REPORT, WHICH YOU
CAN GET ONLINE IF YOU'D LIKE.

0175

1 WE GOT ENOUGH SCIENTIFIC BRIEFING, I THINK,
2 TO FEEL THAT WE WERE GETTING THE PREPONDERANCE OF THE

3 EVIDENCE, AND WE BELIEVED THE TRENDS THAT WE SAW. WE
4 ARE ALL RETIRED FLAG GENERAL OFFICERS, AND THERE IS A
5 CERTAIN SEEMLINESS OR UNSEEMLINESS ABOUT HOW ONE
6 DEPARTS ONESELF EVEN AFTER THEY RETIRE. WHILE NOT
7 EVERYBODY IS LIKE THIS, MOST OF THEM ARE NON, OMNI OR
8 ANTI-PARTISAN AND ARE NOT LINING UP WITH ONE PARTY OR
9 ANOTHER. THERE ARE SOME EXCEPTIONS TO THAT.

10 AND WE CHOSE NOT TO LAY BLAME ON EPA, ON
11 ANY FORMER PRESIDENT, THE AMERICAN INDUSTRIAL
12 REVOLUTION, ANY OF THOSE POTENTIAL SOURCES OF GREENHOUSE
13 GASES. WE DID NOT LAY BLAME,
14 EVEN ON THE CURRENT ADMINISTRATION.

15 WE'VE TRIED TO AVOID POLITICAL STATEMENTS
16 THROUGHOUT THE REPORT AND WATCHED IT VERY CAREFULLY
17 AND TALKED ABOUT THIS FREQUENTLY DURING OUR
18 DELIBERATIONS.

19 WE DID NOT PRETEND TO BE CLIMATE
20 SCIENTISTS. CERTAINLY, THERE WERE PLENTY AROUND US,
21 BUT WE MOSTLY TALKED ABOUT PEOPLE WHO HAD BEEN AND
22 WOULD BE MAKING
23 DECISIONS IN THE \$2 BILLION TO \$100 BILLION RANGE FOR THE
24 4 OR 5 OR 6 YEARS OR SO AT THE TOP END OF THEIR MILITARY
25 CAREERS.

WE WANTED TO STAY WITHIN OUR COMFORT ZONE.
WE DIDN'T POSTULATE ON WHETHER THERE HAD BEEN FRATRICIDE IN
THE
ENVIRONMENTAL COMMUNITY OVER ACOUSTIC TOMOGRAPHY HALF
0176

1 A GENERATION AGO; OR IS THE EPA REALLY DOING ANYTHING
2 WRONG; OR ARE THERE REALLY MORE POLAR BEARS OR LESS
3 POLAR BEARS. WE DIDN'T GET INTO THOSE KINDS OF
4 DISCUSSIONS. WE TRIED TO STAY WITHIN OUR COMFORT
5 ZONE.

6 AND THIS IS IN OUR COMFORT ZONE. WE CAME
7 TO THIS REALIZATION -- THIS IS REALLY MY ONLY
8 GRAPHIC -- ONE CAN BELIEVE IF YOU LOOK AT THE
9 ORDINATE HERE, ONE CAN BELIEVE THAT THIS HIGH
10 PROBABILITY, HIGH CERTAINTY, HIGH BELIEVABILITY, MORE
11 BELIEVABILITY, LESS, THAT CLIMATE CHANGE IS OCCURRING
12 AND WILL CONTINUE ON SOME SLOPE THAT'S EITHER GOING
13 UPWARD OR ACCELERATING. IT REALLY DOESN'T MAKE MUCH
14 DIFFERENCE. WHAT WE CONCLUDED WAS
15 THAT THE IMPACT WAS HIGH, WHETHER IT WAS A LOW
16 PROBABILITY OF OCCURRING OR NOT, THE IMPACT WAS VERY
17 HIGH. THEREFORE, FOR A MILITARY PERSON, THAT MEANS
18 ONE MUST DO SOMETHING. RIGHT? WE WENT THROUGH THESE

19 SAME KINDS OF THINGS WITH NUCLEAR WAR; WHETHER THE
20 SOVIETS WOULD COME ACROSS THE FULDA GAP IN GERMANY;
21 WHETHER THE NORTH KOREANS WILL EVER CROSS THE DMZ AND
22 GO INTO SEOUL. THESE ARE ALL LOW PROBABILITY
23 OCCURRENCES, BUT THE IMPACT IS HUGE. THEREFORE, ONE
24 MUST PLAN FOR IT.

25 SO OUR CHAIRMAN SAID THIS AND HAS WRITTEN

0177

1 THIS AND TESTIFIED TO THIS THE COUPLE OF TIMES THAT
2 HE'S BEEN BEFORE CONGRESS: "A MILITARY PERSON, A
3 MILITARY LEADER IS NEVER 100 PERCENT CERTAIN; BUT IF
4 YOU WAIT UNTIL YOU ARE 100 PERCENT CERTAIN, SOMETHING
5 BAD IS GOING TO HAPPEN." THAT IS SOMETHING THAT WE
6 KNOW, AND THAT'S REALLY WHAT THESE FOLKS ARE ALL
7 ABOUT ALL THE TIME. THEY'RE NOT NECESSARILY DECISION
8 MAKERS; THEY'RE RISK MANAGERS, WEIGHING ONE RISK
9 AGAINST ANOTHER, PREPARING, PLANNING, AND STUDYING TO
10 MAKE A DECISION.

11 SO AFTER GOING THROUGH ALL OF THAT, HEARING
12 THE EVIDENCE, HAVING OUR DISCUSSIONS, COMING TO SOME
13 REALIZATION THAT THIS WAS PRETTY IMPORTANT, THESE ARE
14 SOME FINDINGS THAT WE CAME UP WITH:

15 YES, THIS IS A SERIOUS THREAT, WHETHER WE
16 THINK IT IS GOING TO HAPPEN TOMORROW OR WHETHER WE
17 THINK IT IS GOING TO HAPPEN IN 100 YEARS; OR WHETHER
18 IT IS GOING TO HAPPEN HERE OR THERE. IT REALLY
19 DIDN'T MAKE THAT MUCH DIFFERENCE; IT WAS A SERIOUS
20 THREAT.

21 SECONDLY, IT IS A THREAT MULTIPLIER. THREATS ALREADY
EXIST IN MANY PARTS OF THE

23 WORLD, ESPECIALLY THE MOST VOLATILE REGIONS, AND YOU
24 SEE THEM ON MANY OF THE CHARTS THAT WE'VE SEEN TODAY,
25 THE GEOGRAPHIC CHARTS: NORTH AFRICA, THE MIDDLE

0178

1 EAST, PARTS OF ASIA, MAYBE EVEN THE ANDEAN AREA OF
2 SOUTH AMERICA. THESE ARE VOLATILE AREAS WHERE THE
3 GOVERNMENTS ARE NOT PARTICULARLY STABLE, AND THIS IS
4 ONE MORE BURDEN WITH WHICH THEY MUST COPE.

5 IT CAN ALSO ADD TO TENSIONS -- AS I WILL TELL
6 YOU WHEN I GET TO SOME REGIONAL
7 PARTS OF THIS PRESENTATION -- IN STABLE PARTS OF THE WORLD,
LIKE THE
8 UNITED STATES, IN EUROPE, AND MAYBE EVEN IN CHINA.

9 AND THIS IS BECOMING QUITE OBVIOUS NOW WITH THE PRICE
10 OF OIL, THAT CLIMATE-CHANGE TRENDS, SECURITY, AND

11 ENERGY DEPENDENCY ARE ALL INTERRELATED CIRCLES. YOU
12 CAN'T REALLY SEPARATE THE THREE.

13 NOW, WE HAD SOME OTHER CONCERNS. ADMIRAL
14 TRULY, FORMER ASTRONAUT AND ADMINISTRATOR OF NASA,
15 SAID HE'S WORRIED ABOUT THIS -- FOR YOU THIS IS MAYBE
16 NOT AN ISSUE; BUT FOR THE AVERAGE PERSON, A FOOT IN A
17 HUNDRED YEARS IS NOT NECESSARILY A BIG DEAL,
18 ESPECIALLY WHEN one is THINKING IN TERMS OF A BUDGET
19 CYCLE OF FIVE OR SIX YEARS OR AN EXTENDED PLANNING
20 CYCLE OF 20 OR 30 YEARS. ADMIRAL TRULY IS WORRIED ABOUT “
THE SLOW, GRINDING

21 NATURE” THAT WILL MAKE MANY DECISION MAKERS,
22 ESPECIALLY LESS SOPHISTICATED ONES, IGNORE THIS UNTIL
23 IT'S TOO LATE, NOT GET READY TO MITIGATE OR ADAPT.

24 WE ALSO WERE, I WOULD SAY, UNANIMOUS ON THE
25 NEXT POINT: THAT THE TROUBLED REGIONS OF THE WORLD
0179

1 HAVE GOVERNMENTS THAT ARE OVERWHELMED TODAY WITH MANY
2 PROBLEMS, MANY OF THEM MAY HAVE ALREADY BEEN STARTED
3 BY CHANGES IN LOCAL CLIMATES, LONG OR SHORT TERM. TO
4 GET THEM TO STOP FOR A MINUTE AND TRY UNDERSTAND WHAT
5 YOU'RE TALKING ABOUT HERE, TODAY, IS VERY HARD WHILE THEY
TRY TO COPE WITH

6 CLIMATE CHANGE, WHEN THEY'RE WORRIED ABOUT THE NEXT
PAYCHECK FOR

7 THEIR CIVIL SERVANTS, OR A WAR THAT'S BREAKING OUT IN
8 DARFUR BETWEEN AFRICAN AND ARABIC TRIBES. HOW DO
9 THEY THINK 10, 15 YEARS DOWN THE ROAD? AND HOW DO
10 THEY COPE WITH SOMETHING THAT IS HAPPENING ALREADY?

11 A MAJOR MANIFESTATION OF THESE KINDS OF
12 CHANGES, WE THINK, ESPECIALLY IN THE UNDERDEVELOPED,
13 MORE VOLATILE PARTS OF THE WORLD, ARE MIGRATIONS OF
14 PEOPLE, WHO BECAUSE OF CLIMATE CHANGES, NONETHELESS PEOPLE
NEED TO MOVE TO GET WATER, TO

17 GET SECURITY, FOR BETTER HEALTH, TO AVOID FAMINE, AND
18 TO RELIEVE THEMSELVES FROM NATURAL DISASTERS. YOU
19 WILL HEAR ME SAY A COUPLE OF TIMES THEY'RE ALREADY
20 BUILDING FENCES IN PARTS OF INDIA TO KEEP CITIZENS OF
21 BANGLADESH FROM MOVING INTO INDIA TO AVOID NATURAL
22 DISASTERS. PLAY THAT OUT WITH INCREASED SEA LEVEL
23 RISE, AND YOU'VE GOT MAJOR ISSUES.

24 WE ALSO BELIEVE THAT IT ADDS FUEL TO THIS
25 NOTION OF DESPERATION AND HOPELESSNESS. MANY PARTS
0180

1 OF THE WORLD, THESE VOLATILE PARTS OF THE WORLD, THE
2 UNDEVELOPED PARTS OF THE WORLD, THE ONES WE READ

3 ABOUT ALL THE TIME, ARE REALLY CHARACTERIZED BY PEOPLE THAT
4 DON'T HAVE JOBS, THEY HAVE NO FUTURE, THEIR
5 HOPELESSNESS IS JUST GOING TO ADD MORE TO THAT
6 PARTICULARLY DISMAL SITUATION. AND THAT, WE BELIEVE, ADDS TO
7 A PSYCHE THAT WOULD MORE LIKELY INCENTIVIZE A YOUNG MAN OR
WOMAN TO SIGN UP
8 WITH A FANATIC GROUP OR A FANATIC LEADER; THIS IS A MAJOR
9 POLICY CONCERN.

10 LET ME QUICKLY GO THROUGH ABOUT THREE OR
11 FOUR REGIONS, I THINK, AND JUST GIVE YOU A BULLET OR
12 TWO ON EACH OF THOSE TO MAKE THESE POINTS THAT I
13 THINK MAYBE I HAVE ALREADY MADE. OKAY.

14 WE WILL START WITH AFRICA.

15 HERE'S A PLACE WHERE THE GOVERNANCE IS
16 INCREDIBLY FRAGILE, SO IS THE ECONOMY. WE ALREADY
17 SEE HUMAN MIGRATIONS IN PLACES LIKE THE SUDAN GOING
18 INTO CHAD AND OTHER PLACES IN CENTRAL AFRICA, AND
19 CONFLICTS COMING UP ALL THE TIME AS DESERTIFICATION
20 OCCURS AND HERDERS AND FARMERS COMPETE FOR THE SAME
21 LAND, AND THAT TURNS INTO CONFLICT. WHEN THOSE KINDS
22 OF THINGS HAPPEN -- AND WE ARE SEEING THESE
23 ALREADY -- THIS CALLS UPON THE WORLD'S MILITARY
24 FORCES TO REACT. THERE WILL BE MORE OPERATIONS, WE
0181

1 BELIEVE, WHERE STABILITY IS REQUIRED THAT WILL CALL
2 UPON US. THERE WILL BE MORE HUMANITARIAN ISSUES, AS
3 WELL. AND THAT WILL INCREASINGLY DRAW US INTO THE
4 POLITICAL SITUATION IN AFRICA.

5 WE HAVE ALREADY ACTUALLY DONE THIS. JUST
6 RECENTLY, IN THE LAST COUPLE OF YEARS, THE DEFENSE
7 DEPARTMENT INVENTED A WHOLE NEW REGIONAL COMMANDER
8 FOR AFRICA TO DEAL WITH THESE ISSUES. IT USED TO BE
9 PART OF THE US EUROPEAN COMMAND, SORT OF A SECOND COUSIN.
NOW IT IS A

10 MAJOR ORGANIZATION WITH A FOUR STAR GENERAL IN CHARGE.
AND,

11 OF COURSE, RIGHT NOW SOMEWHERE BETWEEN 25 AND 40
12 PERCENT OF OUR OIL COMES FROM AFRICA. AND AS LONG AS
13 THINGS ARE TRANQUIL, WHETHER YOU LIKE US BURNING OIL
14 OR NOT, THAT'S WHERE WE GET IT, AND TRANQUILITY MEANS
15 SOME KIND OF ENERGY SECURITY FOR US. IF THE
16 TRANQUILITY IS UPSET BY OTHER FACTORS, AND CLIMATE
17 CHANGE COULD BE ONE OF THEM, THEN WE HAVE ANOTHER
18 ENERGY ISSUE TO DEAL WITH.

19 LET'S SEE WHAT'S NEXT.

20 IN THE MIDDLE EAST, WATER IS A MAJOR ISSUE.

21 AND IF YOU -- I'M GOING TO TALK, RICHARD, A LITTLE
22 BIT ABOUT GEOGRAPHIC SPECIFICITY, BUT THE CHARTS YOU
23 SHOWED, SHOWED IT BEING DRIER IN THE MIDDLE EAST IN
24 SORT OF A GENERAL SENSE. AND AS PEOPLE UPSTREAM
25 CONTROL THE WATER, THAT BECOMES A POLITICAL ISSUE.

0182

1 PEOPLE MOVE AS A RESULT OF WATER CONTROL AND WATER
SCARCITY SITUATIONS. PEOPLE FIGHT AS A
2 RESULT OF THAT. POLITICAL BOUNDARIES ARE SET UP.
3 AND WE SEE NOW THAT SMALL CHANGES HERE HAVE A GREATER
4 IMPACT THAN IN MOST PLACES IN THE WORLD. THAT'S
5 GENERAL ZINNI'S BELIEF. HE SPENT QUITE A BIT OF TIME
6 THERE.

7 ASIA: 40 PERCENT OF THE PEOPLE LIVE PRETTY
8 DARN CLOSE TO THE EDGE OF THE OCEAN, AND IT'S NOT ALL
9 MOUNTAINOUS COASTLINE. SOME OF IT IS VERY LOW,
10 ESPECIALLY IN SOUTHEAST ASIA AND
11 PARTS OF SOUTHWEST ASIA. AND THIS INUNDATION AND
12 MOVEMENT OF PEOPLE CAN BE AN ISSUE FOR THE GOVERNANCE
13 IN THAT PARTICULAR AREA. WE ALSO KNOW THAT THERE ARE
14 DISEASE-BORNE VECTORS THAT ARE RELATED TO CLIMATE
15 CHANGE, AND THAT'S BEEN STUDIED HERE. BUT HOW ABOUT THIS
16 THOUGHT? IF YOU JUST LOOK AT THOSE CHARTS THAT
17 RICHARD JUST SHOWED A MOMENT AGO AND YOU SEE SIBERIA
18 WARMING UP AND GETTING MORE PRECIPITATION AND WESTERN
19 CHINA BECOMING DESERTIFIED, RIGHT, LESS AND LESS
20 WATER, WHO'S GOING TO BE RAISING THE FOOD IN THAT
21 WESTERN CHINA PART OF THE WORLD AND WHAT DOES THAT SAY
ABOUT
22 RELATIONS IN THE FAR EAST? WELL, IT'S SOMETHING THAT
23 ONE MUST THINK ABOUT AND PLAN FOR.

24 I THINK THE FINAL ONE I HAVE UP HERE -- ONE
25 SLIDE DROPPED OUT, I GUESS, DURING THE LIGHTNING IS

0183

1 -- WE ALREADY KNOW THAT IN PLACES LIKE BOLIVIA AND
2 OTHER COUNTRIES, IN THE ANDEAN AREA OF SOUTH AMERICA, THAT
3 GLACIER MELT HAS BEEN RATHER EXTREME BY RECENT TERMS,
4 AND THIS IS GOING TO BE AN ISSUE FOR PEOPLE AND AGAIN
5 CAUSE MIGRATION. AND IS THIS MIGRATION OUR WAY? WE
6 DON'T KNOW.

7 I MENTIONED -- I HAD A SLIDE ON EUROPE. IT
8 DOESN'T SHOW UP HERE. BUT EUROPE IS WORRIED TODAY
9 ABOUT MIGRATION. PEOPLE FROM NORTH AFRICA AND THE
10 MIDDLE EAST ARE SEEKING A BETTER LIFE, WHERE THE
11 CLIMATE MAY BE BETTER, ASSUMING EUROPE IS BETTER, IT
12 MAY BE QUITE A BIT WARMER, BUT THAT IS AN ISSUE FOR

13 THEM, TOO, THAT DEFLECTS THEIR MILITARY.

14 THERE ARE SOME MILITARY CONCERNS. WE
15 EXPECT MORE REGIONAL CRISES TO DEAL WITH MIGRATION,
16 AS I MENTIONED, HOPELESSNESS, INSTABILITY OF
17 GOVERNMENTS; AND WE SEE COUNTRIES, STABLE COUNTRIES,
18 MAYBE LIKE THE UNITED STATES, BECAUSE WE'RE DEALING
19 NOW WITH AN UNRESOLVED IMMIGRATION POLICY, AND
20 EUROPE, STABLE AREAS, THINKING ABOUT WHAT THEY ARE
21 GOING TO DO ABOUT IMMIGRANTS. AND AS MILITARIES ARE
22 DEFLECTED FROM THEIR NORMAL ROLE TO WORRY ABOUT
23 IMMIGRATION, THIS CHANGES THE WHOLE SCHEME. AND OF
24 COURSE, AS I MENTIONED BEFORE, THERE ARE DISASTER
25 RELIEF AND HUMANITARIAN PRESSURES ON THE ONLY REALLY
0184

1 GLOBAL MILITARY FORCE IN THE WORLD, AND THAT IS THE
2 UNITED STATES MILITARY. THE GOOD SIDE OF THAT IS THERE ARE
MORE

3 ENGAGEMENT OPPORTUNITIES, AND USUALLY THE U.S.
4 MILITARY DOES A GOOD JOB IN THESE HUMANITARIAN AREAS,
5 AND THEY MAKE FRIENDS FOR A LONG TIME.

6 WE HAVE TO LOOK AT OPERATING AREAS. WE
7 TALKED ABOUT SEA LEVEL. WELL, A FOOT IN THE NEXT
8 80 OR 90 YEARS MAY NOT BE A BIG DEAL FOR MANY PARTS
9 OF THE U.S. MILITARY, BUT THIS IS DIEGO GARCIA. THE
10 HIGHEST POINT OF DIEGO GARCIA IS 4 FEET ABOVE MEAN
11 SEA LEVEL. THIS IS A RUNWAY ON AN ISLAND ATOLL IN
12 THE MIDDLE OF THE INDIAN OCEAN, VERY IMPORTANT FOR
13 CURRENT OPERATIONS, AND HAS BEEN FOR ABOUT 20 YEARS.

14 AND THEN LOOK AT THAT HIGH ARCTIC. WE HAVE
15 SEEN THIS GRAPHIC BEFORE, I THINK. PRESIDENT
16 CICERONE SHOWED IT EARLIER. YOU CAN SEE THE
17 NORTHWEST PASSAGE THERE. THIS HAS IMPLICATIONS NOT
18 ONLY FOR LAW-OF-THE-SEA JURSDIDITION AND WHO IS IN CHARGE
19 OF WHAT, WHO OWNS WHAT UP THERE. BUT HOW DOES ONE
20 GUARANTEE THE SAFE PASSAGE, THE SECURE PASSAGE OF
21 COMMERCE UP THERE? WHAT KINDS OF SHIPS DOES ONE HAVE
22 TO BUILD? AND DOES THE ANTISUBMARINE WARFARE PROBLEM
23 CHANGE IN THAT VERY COMPLICATED AREA, WHICH WILL
24 ALWAYS BE A MARGINAL ICE ZONE (NEVER WILL BE
25 COMPLETELY WITHOUT ICE).

0185

1 AND THEN IF IT IS DRIER OR WETTER OR
2 STORMIER, AS WE JUST HEARD, OR SHALLOWER OR THERE'S
3 MORE ICE OR LESS ICE, THERE CAN BE A WEAR-AND-TEAR EFFECT ON
THINGS. FOR EXAMPLE: DUST STORMS ARE BAD NEWS FOR HELICOPTER
BLADES

5 AND FOR ENGINE INTAKES, AND IT MAKES AIRCRAFT CARRIER
6 DECKS SLIPPERIER, AND WE NEED ICE-STRENGTHENED HULLS;
7 AND AS I SAID, THE ANTISUBMARINE WARFARE PICTURE MAY
8 CHANGE. WE MAY HAVE TO BUY, BECAUSE OF HUMANITARIAN
9 AID, MORE HEAVY LIFT, MORE SHIPS AND AIRCRAFT TO
10 CARRY PEOPLE A LONG WAY.

11 AND THEN THE THIRD PART OF THIS IS: ARE
12 THERE CONTRIBUTIONS THAT THIS NATIONAL SECURITY
13 COMMUNITY CAN MAKE; THE THREE COMMUNITIES
14 SPECIFICALLY, DIPLOMATIC, INTELLIGENCE, AND MILITARY?
15 WELL, CERTAINLY THIS GROUP OF THREE HAS GREATER
16 GLOBAL REACH THAN ANYBODY ANYWHERE IN THE WORLD, EVEN
17 MORE THAN NOAA.

18 (LAUGHTER)

19 IT HAS AN INCREDIBLE SWEEP, AN INCREDIBLE
20 INVESTMENT IN SENSORS AND COMPUTATION. IT HAS SOME
21 DECENT TALENT. JUST IN THE NAVY'S METEOROLOGY AND
22 OCEANOGRAPHY FORECASTING OPERATIONAL SIDE, THERE ARE
23 THOUSANDS OF PEOPLE, MORE THAN HALF OF THEM CIVILIANS WITH
24 ADVANCED DEGREES. AND WE HAVE DATA. WE HAVE LOTS OF
25 DATA, RAW DATA. YOU CAN TAKE RAW DATA AND DECLASSIFY
0186

1 IT. SOME OF IT IS CLASSIFIED AND SOME OF IT'S
2 UNCLASSIFIED. NEW DATA SETS MIGHT BE DERIVED FROM THAT RAW
CLASSIFIED DATA THAT CANNOT BE RELEASED IN RAW FORM.
3 AND WE CAN COLLECT ENVIRONMENTAL DATA IN PARTICULAR
4 PLACES, FIDUCIAL SITES, OVER AND OVER AND OVER AGAIN, AND
THEY ARE LIKELY
5 TO BE HARD-TO-REACH PLACES LIKE THE HIGH ARCTIC, LIKE
6 SIBERIA.

7 WE HAVE THE ABILITY, BECAUSE MILITARIES AND
8 INTELLIGENCE SERVICES AND DIPLOMATS DO TALK TO ONE
9 ANOTHER, WE HAVE THE ABILITY TO COOPERATE WITH EACH
10 OTHER AND EDUCATE EACH OTHER. AND THAT EXPERIMENT
11 WAS TRIED IN THE '90S WITH A PROGRAM CALLED MEDEA --
12 WHICH IS A GREEK WORD, IT'S NOT AN ACRONYM -- AND ITS
13 ENVIRONMENTAL TASK FORCE. THESE WERE QUIET
14 SUCCESSES. SO I WANT TO JUST GIVE YOU SOME EVIDENCE
15 OF THIS.

16 AS A RESULT OF THAT DISCUSSION ABOUT WHAT
17 CAN THE DEFENSE AND INTELLIGENCE COMMUNITY GIVE TO
18 ENVIRONMENTAL SCIENTISTS AROUND THE WORLD, WE
19 DECLASSIFIED THE GEOSTAT ALTIMETRY PROGRAM. LONG
20 TIME SERIES VISUAL PICTURES, PHOTOGRAPHS, IF YOU
21 WILL, WITH A CAMERA FROM SPACE FROM THE MILITARY BASE FROM
YEAR TO YEAR TO YEAR OVER

25 20 OR 30 OR 40 YEARS. DATA COLLECTED BY SUBMARINES
0187

1 OVER DECADES INSIDE AN AREA CALLED THE GORE BOX --
2 ISN'T THAT A STRANGE NAME? -- THE US GOVERNMENT TOOK THE
3 TIMES AND EXACT LOCATIONS OF THE SUBMARINES OFF THE DATA
AND ONE
4 STILL COMES UP WITH A VALUABLE DATA SET THAT PEOPLE
5 ARE STILL ABLE TO USE TODAY. MOST OF THE
6 NAVY'S HYDROGRAPHIC SECTIONS, TEMPERATURE, SALINITY, AND
7 DEPTH, WERE DECLASSIFIED AND MADE AVAILABLE TO THE
8 PUBLIC. THERE WAS AN EXCHANGE BETWEEN THE RUSSIAN
9 NAVY AND THE U.S. NAVY OF ALL OF THEIR RESPECTIVE ARCTIC
10 DATA, METEOROLOGICAL, OCEANOGRAPHIC, AND ICE. THEY
11 WERE MERGED INTO A SINGLE DATABASE AND MADE AVAILABLE
12 TO ALL OF YOU, WHICHEVER COUNTRY YOU'RE FROM.

AND MANY SCIENTISTS WERE CLEARED -- NOT THOUSANDS --

BUT

14 TENS WERE CLEARED, GIVEN SECURITY CLEARANCES TO COME
15 INSIDE THE CIA, INSIDE THE DEFENSE DEPARTMENT, TO SEE
16 ACTUALLY WHAT KIND OF DATA WE HAD AND WHAT KIND OF
17 PROCESSES WE USED, AND WHAT KIND OF SENSORS WE HAD.
18 THEY COULD NOT ONLY GIVE US ADVICE, BUT THEY COULD
19 HELP US DETERMINE WAYS THAT THAT DATA MIGHT BE MADE
20 AVAILABLE TO OTHERS WITHOUT COMPROMISING SECURITY.
21 IT BROUGHT INCREDIBLY STRANGE PEOPLE TOGETHER.
22 SENATOR GORE AND DIRECTOR OF CIA GATES STARTED THIS
23 WHOLE PROCESS MORE THAN 10 YEARS AGO. AND THEN VICE
PRESIDENT
24 GORE SAID, IF I CAN WORK WITH THE CIA, HE SAID, THEN
25 WHY CAN'T THE U.S. WORK WITH THE RUSSIANS TO TRY TO
0188

1 DO THE SAME KINDS OF THINGS. VERY SUCCESSFUL, IN MY
2 OPINION.

3 NOW, I WASN'T ON THE OSCAR SELECTION
4 COMMITTEE OR THE NOBEL PRIZE PANEL, BUT I'LL TELL YOU
5 WHAT, THIS PARTICULAR CONTRIBUTION BY SENATOR AND
6 VICE PRESIDENT GORE, GETTING THE DEFENSE AND
7 INTELLIGENCE COMMUNITY MOBILIZED TO PROVIDE ITS
8 TALENT TO THE WORLD SCIENTISTS WAS A GREAT THING, IN
9 MY OPINION.

10 OKAY. LET ME START TO CLOSE UP HERE BECAUSE OF THAT
GREEN BOX UP [CERTAINTY-IMPACT MATRIX BOX]

12 THERE, WE NEED -- WE, IN THE DEFENSE AND INTELLIGENCE
13 COMMUNITIES -- NEED TO START PLANNING FOR CLIMATE
14 CHANGE, SEEING THE TRENDS THAT WE HAVE TODAY. WE
15 NEED TO HAVE A STRONGER ROLE, AND THAT MEANS THE

16 DEFENSE COMMUNITY NEEDS TO HAVE A STRONGER ROLE WITH
17 THE OTHER AGENCIES OF GOVERNMENT.

WE NEED TO HAVE PARTNERSHIPS WITH OTHER PEOPLE.
WE NEED TO ADAPT OUR

19 OWN BUSINESS PRACTICES -- BECAUSE THE DEFENSE
20 DEPARTMENT OWNS A LOT OF REAL ESTATE AND BURNS A LOT
21 OF FUEL -- AND LOOK AT OUR INSTALLATIONS IN THE
22 LONG-TERM.

23 NOW, RECENTLY BOTH THE HOUSE ARMED SERVICES
24 COMMITTEE AND THE SENATE ARMED SERVICES COMMITTEE,
25 IN THEIR BILLS THAT ARE PENDING, THEY'RE IN

0189

1 CONFERENCE, WILL BE PROBABLY FOR ANOTHER MONTH, HAVE
2 BOTH SUGGESTED THAT THE DEFENSE DEPARTMENT CONSIDER
3 CLIMATE CHANGE IN ITS LONG-TERM PLANNING. AND THE
4 NATIONAL INTELLIGENCE COUNCIL IS DOING A NATIONAL
5 INTELLIGENCE ESTIMATE THAT INCLUDES CLIMATE CHANGE
6 TRENDS. SO THAT, I THINK, IS ALREADY A VICTORY FOR
7 THIS PARTICULAR CNA REPORT.

8 SOME CONCLUSIONS OF MINE: WE SHOULD BE
9 FULLY INVOLVED. I THINK YOU MIGHT BE ABLE TO TELL
10 FROM WHAT I'VE SAID THAT I BELIEVE THAT THERE ARE
11 MANY WAYS WE SHOULD BE INVOLVED FOR OUR OWN SAKE, BUT
12 WE CAN ALSO CONTRIBUTE. AVERAGE CLIMATE CHANGE EFFECTS
ARE EVEN EFFECTS THROUGHOUT THE
14 WORLD; AND IF WE'RE GOING TO USE THIS INFORMATION
15 THAT YOU HAVE IN SPECIFIC PLANS FOR NATIONAL
16 SECURITY, IT NEEDS TO BE AS REGIONALLY SPECIFIC AS
17 POSSIBLE AS TIME GOES ON.

18 WE, IN THE MILITARY, CAN SET AN
19 EXAMPLE FOR MORE EFFICIENT ENERGY USE BECAUSE THERE
20 ARE ABOUT 2 MILLION PEOPLE IN THE DEFENSE DEPARTMENT,
21 AND IF SOMEBODY SAYS "GO LEFT," ABOUT 1,990,000
22 ARE GOING TURN GO LEFT. SO WE CAN, IN FACT, MAKE
23 PROGRESS WHERE OTHER PARTS OF SOCIETY CAN'T
24 NECESSARILY OR QUICKLY.

25 AND, FINALLY, MY OPINION HERE, WE NEED TO UNDERSTAND

0190

1 BETTER, SO KEEP UP WHAT YOU'RE DOING. WE NEED TO
2 ANALYZE BETTER. WE'RE NOT DOING ENOUGH OF THAT. IT
3 WAS THE FIRST PRINCIPLE OF THE U.S. COMMISSION ON
4 OCEAN POLICY, ON WHICH I SERVED, AND IT IS IMPORTANT.

5 THANK YOU VERY MUCH.

6