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NUCLEAR REGULATORY COMMISSION

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29th ANNUAL REGULATORY INFORMATION CONFERENCE

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SPECIAL GUEST PLENARY SESSION

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WEDNESDAY,

MARCH 15, 2017

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ROCKVILLE, MARYLAND

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The Regulatory Information Conference met in the Grand Ballroom at the Bethesda North Marriott Hotel & Conference Center, 5701 Marinelli Road, Rockville, Maryland, at 11:00 a.m., Victor M. McCree, NRC Executive Director of Operations, facilitating.

PRESENT:

ADMIRAL ROBERT F. WILLARD, U.S. Navy (Retired),

President and Chief Executive Officer,

Institute of Nuclear Power Operations

VICTOR M. McCREE, Executive Director of Operations,

Nuclear Regulatory Commission

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Advancing Safety and Reliability

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P-R-O-C-E-E-D-I-N-G-S

11:01 a.m.

DIRECTOR McCREE: Well good morning.

If you would kindly take your seats. To close out our opening plenary session, I have the honor of introducing a special guest speaker, Admiral Robert F. Willard. Admiral Willard was elected president and chief executive officer of the Institute of Nuclear Power Operations (INPO) in May of 2012.

In leading a review of the challenges to sustaining and improving the U.S. nuclear power industry's high level performance, he has focused INPO's efforts on preventing performance decline, the permanent recovery of lower-performing plants, and strengthening industry leadership capabilities.

Prior to joining INPO, Admiral Willard completed a distinguished Navy career as Commander, U.S. Pacific Command. During his Navy career he served as an aviator and in leadership roles in a variety of fighter squadrons. Following nuclear power training, he commanded the aircraft carrier USS Abraham Lincoln.

Bob is a graduate of the United States Naval Academy and earned a master's degree in Engineering Management from Old Dominion University. Please join me in welcoming Admiral Bob Willard.

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1 (Applause.)

2 ADMIRAL WILLARD: Thank you, Vic for that
3 kind introduction. I'd just like to applaud all of you
4 for being in the audience today, for making it here.
5 After yesterday, I was wondering whether we had a slot
6 to speak and you've certainly showed up. So thank you
7 very much for that and thank you for honoring the NRC
8 in that way.

9 Thank you Chairman Svinicki for the
10 invitation to speak this morning. It's both an honor
11 and a pleasure to be here. INPO and the NRC have a
12 strong history of working together. We think that
13 INPO's efforts complement the work of our national
14 regulator, and while there are a few areas of overlap,
15 there is synergy in what these two organizations
16 accomplish, resulting in a stronger and safer nuclear
17 industry.

18 For those of you who may not be familiar
19 with INPO, the Institute of Nuclear Power Operations was
20 created in 1979 in response the President's Commission
21 on the accident at Three Mile Island. The Commission's
22 report called for a dramatic change in the industry's
23 attitude towards safety, for the industry to set and
24 police its own standards of excellence, for the
25 effective sharing and analysis of operating experience,

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1 and for a stronger focus on training.

2 United States utilities created INPO that
3 year as an organization through which those mandates
4 could be accomplished, and in so doing established a
5 self-regulatory regime unlike anything seen before.
6 The INPO mission is to promote the highest levels of
7 safety and reliability, to promote excellence in the
8 operation of commercial nuclear power plants.

9 For 36 years, six attributes have made the
10 INPO model effective, including utility CEO
11 involvement, an almost singular focus on nuclear
12 safety, industry support to INPO's programs and mutual
13 support to one another, accountability, independence
14 and confidentiality.

15 In almost every area that can be measured,
16 industry performance is at an all-time high and
17 continues to improve. That's been the case for the last
18 five years, despite the marketplace and economic
19 challenges that are facing us. This is a tribute to
20 everyone with a stake in nuclear, to the industry itself
21 and their commitment to continuous improvement, to the
22 Nuclear Regulatory Commission and many of you, and we
23 think to INPO.

24 The aftermath of Fukushima, including the
25 development of FLEX as a subset of a revitalized

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1 national and international emergency response strategy
2 is just one example of the depth of cooperation that has
3 become commonplace in this industry. You won't find
4 this level of mutual support in a private sector
5 anyplace else.

6 But in our business, nothing remains static
7 and the quest for excellence is never over. It's INPO's
8 job to view deeply into industry performance and to
9 understand what challenges it, then to help shape the
10 industry's responses to those challenges.

11 That requires not just technical
12 expertise, which we have, but also a profound
13 understanding of the industry as a whole, including its
14 past and its future.

15 This morning I'm going to be talking about
16 the future of our current industry, the stations that
17 are operating and supplying a fifth of our nation's
18 electricity supply as we meet here today. We
19 acknowledge that the groundwork is being laid for a
20 future recapitalized industry by DOE and our national
21 labs, in advanced reactor designs and small modular
22 concepts, and the work that NRC is doing to prepare
23 itself and more directly at the SCANA and Vogtle
24 construction sites.

25 The graphs that you'll see capture a bit of

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1 that, but my emphasis will be more on the industry that
2 we all grew up with, and the considerations to maintain
3 its performance at the highest levels going forward.
4 Today's industry was created in the latter half of the
5 20th century, largely to continue to advance
6 industrialization and manufacturing growth in the
7 United States.

8 For its many unique attributes, it was
9 expected to contribute to a future of reliable, clean
10 and cheap electricity. From commissioning of the first
11 unit of record in the early 1960's, it grew to its
12 present scale in about 25 years, in the span of the birth
13 and growth of just one new generation of Americans.

14 At the end of its first decade, when the
15 industry was less than half grown, we learned our most
16 profound safety lesson. The accident at Three Mile
17 Island established that nuclear was different, that it
18 could not be operated in the same fashion as other
19 industries, including fossil generation.

20 But that the profound power resident in the
21 core that would enable us to produce electricity
22 continuously for years at a time without the need to
23 refuel, came with a price: an obligation to know more
24 and to do more to assure safety. That was nearly 40
25 years ago.

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1 In the next 15 years, the U.S. nuclear
2 industry grew to more than 100 units, generating 100
3 gigawatts of electricity which we now know is about 20
4 percent of America's demand as a fully industrialized
5 and developed nation. We were the largest nuclear
6 industry in the world, but we were not the only one.

7 In 1986 the Soviet Union learned their
8 harsh nuclear lesson at Chernobyl, and as the rest of
9 the world's industries felt the repercussion of the
10 accident in Ukraine, awareness that in nuclear safety
11 we were indeed hostages of each other led to the creation
12 of the World Association of Nuclear Operators (WANO),
13 of which we are now all members.

14 By the time our industry was fully formed
15 in the early 1990's, new demands for higher quality
16 electricity that is better conditioned voltage and
17 frequency, had resulted from the digital revolution.
18 To avoid interruptions, computers required better
19 quality power than legacy factories did.

20 That demand has only increased over time,
21 and while the nuclear industry baseload is considered
22 to be high quality electricity today, the broader grid
23 is nonetheless being challenged to meet its quality
24 demands due to the wider variety of intermittent
25 generating sources that are feeding into it.

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1 The 9/11 terrorist attacks on the U.S.
2 placed new demands on the nuclear industry. Considered
3 critical infrastructure, U.S. utilities were made to
4 enhance their physical security at great cost. As a
5 retired military guy, I'm still amazed at the security
6 that we've established around this domestic industry.

7 The evolution of cyberthreats too called
8 for new investments by the industry in order to guard
9 their digital systems from attack. And then came the
10 recession in 2007, and the energy windfall of fracking
11 that has enabled access to so much oil and cheap natural
12 gas that it is altered America's energy security
13 calculus in subsidized renewables.

14 For our industry, these three factors
15 helped created market dynamics that are challenging
16 their survival in the free enterprise system. As we've
17 already mentioned, the Japanese accident at Fukushima
18 Daiichi not only reinforced previous lessons regarding
19 our special obligation for nuclear, but challenged the
20 industry's assumptions regarding the possibility of
21 natural events beyond any design basis, leading to FLEX
22 and other actions to better equip ourselves to deal with
23 any future large-scale event no matter the size or the
24 cause.

25 Fukushima response was a \$4-1/2 billion

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1 investment for the U.S. industry. That brings us to an
2 industry that is now nearly 50 years old, and has a
3 remaining life span of about 35 more years. In all,
4 this was an industry designed to last about one human
5 lifetime before giving birth to another.

6 If you were born in the 1960's or later,
7 you'll probably be around to see this magnificent 20th
8 century industry to its finish line. If I live to be
9 100, I'll see it. Additional license extensions can
10 affect the curve, but not the final outcome. How
11 remarkable is it that amidst all its challenges, that
12 this middle-aged nuclear industry is presently at the
13 top of its game?

14 Not only that, but its performance
15 continues to improve. It will be for others to decide
16 whether and when a new nuclear industry that adapts to
17 the demands of the 21st century will replace this one.
18 As that occurs, there will be old lessons to apply from
19 the 50 years of journey thus far and new ones to learn.

20 But for INPO and I would offer the NRC, the
21 impending 35 years of this industry's life span will
22 present unique challenges just as the first 50 years
23 did. INPO monitors 15 functional areas of performance
24 at each industry sites continuously, and at the same
25 time it observes for any adverse effects resulting from

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1 outside and inside pressures on the utilities, whether
2 they be financial, workload-related or anything else
3 that could affect sound decision-making.

4 Today, we're attuned to the marketplace
5 effects that have resulted in announcements of early
6 decommissioning decisions, and how those decisions
7 affect the treatment of plants, or how they manifest in
8 leadership actions to keep performance levels high. In
9 future years, as site decommissionings become a
10 necessary routine for the 20th century industry, there
11 will be new performance-related decisions to be made.

12 But in the long term, there is an equally
13 important dynamic to watch out for. Just as a strong
14 national regulator sits above our industry, our
15 industry's health relies on a structural foundation
16 into which it's rooted that is both complex and critical
17 to its future.

18 It's made up of factors like a strong
19 science and engineering educational foundation in our
20 country, with nuclear curriculums to prepare the future
21 industry builders and leaders. This includes elements
22 like the Navy nuclear power program and continued
23 commitments by MIT and other highly technical
24 institutions to keep their nuclear curriculums strong
25 and relevant.

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1 It includes a strong technical
2 manufacturing base, from which our industry derives
3 technical standards, benchmarks and recruits talent.
4 It includes a robust vendor base and supply chain that
5 continue to meet high nuclear standards and can provide
6 a superior supplemental workforce.

7 It includes a nuclear fuel cycle that can
8 continue to meet the demands of this industry and its
9 specific fuel needs, and it includes an energy grid that
10 continues to accommodate what nuclear generation
11 provides. To the extent that any of these critical
12 features might founder as our legacy industry
13 contracts, it would be damaging.

14 Should there exist a critical mass along
15 the way, a diminished legacy industry size that would
16 result in these foundational capabilities no longer
17 being supportable, it would be debilitating to the
18 future sustainment of the industry we have, an immense
19 rebuilding cost to the next generation nuclear
20 industry.

21 For INPO, there's no circumstance where
22 industry standards of excellence can be compromised.
23 To the contrary, the exemplary safety and reliability
24 that our industry is achieving today forms the basis for
25 continuous performance improvement in the future.

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1 That's our mandate and call to action.

2 For all of us with a stake in this
3 industry's future performance, our collective mission
4 is to work together to keep it together, to effectively
5 lead, to work as a team, to manage to the highest
6 possible industry standards, to control the workload
7 and to sustain the competence, the proficiency of our
8 nuclear workforce.

9 INPO walks a fine line not to advocate for
10 this industry because of our mandate to objectively
11 grade it. But that doesn't mean we shouldn't be proud
12 of it, and of all of you who are dedicated to raising
13 its performance. I certainly am. Thank you for the
14 NRC for having me here today, and thank you all very
15 much.

16 (Applause.)

17 DIRECTOR McCREE: Admiral, thank you for
18 your very thought-provoking remarks. We have a couple
19 of questions. I'll start with the first one. What can
20 INPO do to facilitate the incorporation of advanced
21 component technologies into existing plants?

22 ADMIRAL WILLARD: Yeah. So the decisions
23 to advance the technologies in existing plants are
24 something that INPO monitors very carefully. Our
25 technical departments are very much involved, as we see

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1 new technologies being implemented into our existing
2 plants. We participate in many of the forums that many
3 of you do in terms of what those technologies can be or
4 may be, and their time tables.

5 At the end of the day, INPO's interest is
6 in safe operations of the plants, and ultimately that
7 those technologies, as they are incorporated into our
8 plant activities, don't result in second or third order
9 adverse effects on the plants.

10 So INPO, you would find in any new build,
11 whether that is new technologies being introduced into
12 the legacy plants or new plants coming online, has a
13 focus on those technologies as they relate to the
14 operations, the safe operations of the plant and our
15 interests are in all of the change management factors
16 associated with making those new technologies
17 successful.

18 So while we participate, the ultimate
19 decisions to incorporate and invest in those
20 technologies are decisions that the utilities make.
21 INPO's responsibility is to see that those changes are
22 introduced into the industry without adverse effect.

23 DIRECTOR McCREE: Thank you. There are
24 two related questions and one of the questioners,
25 recognizing your experience as a Naval aviator,

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1 indicates that like airframe flight hours, do nuclear
2 systems have an end of life and the context of the --

3 The heart of the question is could you
4 advise what about INPO's focus includes activities that
5 are changing or may change due to plants operating in
6 extended periods of operation, and of course the concern
7 there would be aging issues. What is INPO focused on
8 in that area?

9 ADMIRAL WILLARD: Yes, certainly. Like
10 an aircraft that I'm familiar with, a plant in our
11 industry, one of the legacy plants built in the 20th
12 century has a life cycle for sure. In fact NRC, as they
13 are managing license extensions, are managing that life
14 cycle forward and have done so very successfully.

15 Nonetheless, there's a life cycle there,
16 and there are complicating factors in the back half of
17 the life span of any technology, and frankly there are
18 factors in the front end, you know, that are unique and
19 challenging at times, with new technologies that are
20 being introduced.

21 INPO, in monitoring plant performance to
22 standards of excellence, again on the technical side
23 remains engaged and witting of what changes and factors
24 are being considered as our plants age, and as the plants
25 reach end of life, the end of their life cycle and are

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1 approaching decommissioning, the areas of emphasis
2 change a bit as we evaluate plants as we monitor
3 continuously plant performance, as we see them to
4 ultimately removing fuel from a plant and
5 decommissioning, to ensure that the safety-related
6 systems that have to transcend decommissioning are all
7 in good shape, intact and that the staffing and that the
8 operators that are going to carry the plant forward are
9 suitable, well-trained and ready for that next task.

10 What INPO has done in the past is end our
11 membership at the point at which the NRC has seen to the
12 decommissioning of a plant through the exchange of
13 letters following the removal of fuel, and the utility
14 has come to INPO and requested to be demembered
15 following that point in time.

16 So INPO's role does stop at present at the
17 point of plant decommissioning. But we've seen to the
18 preparations for and hopefully that transition through
19 the decommissioning process.

20 DIRECTOR McCREE: Thank you. Another
21 question and this gets into the international area.
22 The question is how has INPO's decision to shut down its
23 international program affected its ability to enhance
24 or influence nuclear safety in the U.S. as well as
25 worldwide?

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1 ADMIRAL WILLARD: That's a good question.
2 So you may or may not be aware that INPO for its 38 years
3 of existence, in fact since about 1981 I think, has had
4 an international program. The international program
5 were generally volunteer utilities from foreign
6 countries that wanted to participate in INPO's
7 programs, and had joined a forum that met a couple of
8 times a year and they had access to INPO intellectual
9 property as a consequence of that.

10 In those meetings, meeting forums that we
11 would have, we would exchange information on operating
12 performance both nationally and internationally with
13 them. It was intended to benefit those international
14 participants with regard to the standards that were
15 being applied across the U.S. national industry.

16 We have at INPO a strategic framework that
17 has three interrelated parts. One is, and the most
18 prominent one is our industry-facing responsibility to
19 the national industry, to the U.S. industry, and it's
20 the most comprehensive of the strategies. Another is
21 our corporate strategy that just handles the way in
22 which INPO itself is structured and sustained, and
23 another is an international strategy.

24 That international strategy has some
25 priorities in it, and one of those priorities in fact

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1 the top priority is to see to the continued advancement
2 and improvement of the World Association of Nuclear
3 Operators, WANO. I mentioned WANO earlier in the
4 remarks as having been created following the Chernobyl
5 accident in Russia.

6 In the early 1990's WANO formed, and it is
7 going strong today. In fact, it's post-Fukushima
8 initiatives have probably done more to both advance WANO
9 and advance the international industry in recent times
10 than virtually anything in its history. So WANO's been
11 around for more than 25 years, and INPO as a member of
12 WANO, alongside all of our industry members, is
13 committed to WANO's success.

14 Frankly in analysis it was felt that the
15 international participant forum program that INPO was
16 executing was drawing resource away potentially from
17 WANO. And so the agreement was made with the WANO
18 senior leadership, executive leadership that we would
19 divest of the international participant program at
20 INPO, and that WANO could in turn pick it up.

21 And there was a meeting, a forum that was
22 hosted, co-hosted by INPO and WANO in Spain, where that
23 transfer of responsibility occurred, and a London
24 office, which is the coordinating center for WANO, is
25 currently in the process of advancing their initiative

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1 to pick up the international participant forum
2 themselves.

3 Again, it was a resourcing issue. So if
4 they're applying resources to associate with INPO, the
5 question is couldn't those resources be better applied
6 through associating with their regional offices in the
7 world association?

8 So that was the basis for the decision, and
9 we think in the end WANO will be the recipient of
10 additional resources and additional focus, and frankly
11 those international participants are likely to place
12 additional demands on WANO regional centers with regard
13 to their needs, and that will help advance WANO as well.

14 DIRECTOR McCREE: Thank you. Two
15 questions related to cost containment or cost
16 reduction. So maybe we can get a two-for here, but the
17 general thrust of the question is what is INPO doing to
18 help utilities reduce costs while continuing to promote
19 excellence in plant performance and safety, and as an
20 example of an area that may yield some efficiencies, as
21 whether or not there are any potentially overlapping
22 activities performed by INPO and NRC and if so, what has
23 or what could be done to streamline those activities and
24 again reduce costs?

25 ADMIRAL WILLARD: Yeah, thank you. We all

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1 know that our industry is under tremendous cost
2 pressures today, and we're certainly witting of that
3 at INPO. In the past several years within our
4 strategic design, we had kind of a wrap-around issue
5 termed "cumulative impact," and it had to do with what
6 were seen as onerous processes that had been kind of
7 applied over the years, some of them self-inflicted by
8 the industry on -- in some areas that were unnecessarily
9 consuming time and resource.

10 And with the Deliver the Nuclear Promise
11 initiative that was mentioned earlier, I think, by Vic,
12 I mean that initiative was intended similarly to look
13 at processes that were both overly expansive and
14 expensive to execute. So when we talk about corrective
15 action program, which came up this morning, of great
16 interest to the NRC, the corrective action program
17 frankly over the years has grown a front office that
18 itself is very high cost and probably over-prescriptive
19 in the administration of that program.

20 And so it was felt that there were areas in
21 some of these expensive processes that could be
22 deconstructed and made more efficient and in some ways
23 made more effective. So the Deliver the Nuclear
24 Promise issue, which INPO is a signator on all of these
25 efficiency bulletins that are being generated toward

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1 the industry, is intended to pick off these process
2 areas, procedural areas that are overly-prescriptive
3 and expensive, and replace them with a process that is
4 more efficient and effective.

5 Our role in all of that is to ensure that
6 there is no harm done to safety reliability. In fact,
7 the mandate from the board of directors of INPO to me
8 was to do no harm to safety reliability as a result of
9 our involvement in Deliver the Nuclear Promise.

10 We are accounting for that, both in our
11 review of the efficiency bulletins, as well as our
12 continued engagement with the industry, both in
13 continuous monitoring and evaluations to ensure that
14 there are no second or third order effects resulting
15 from that work that we may attribute back to a Deliver
16 the Nuclear Promise initiative.

17 So INPO in that sense is engaged in trying
18 to assist the industry in finding efficiencies in cost.
19 There are areas of overlap between INPO and the NRC, but
20 they are very few. To give you an example, corrective
21 action program we looked at when we go to a plant, NRC
22 is very much involved in the corrective action program
23 in its own right.

24 We've looked at those areas of our safety
25 culture is another area that we look at every time we

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1 conduct a peer review or an evaluation at plant, and it's
2 an area of focus for the NRC as well.

3 But the area of overlap are very few on
4 purpose, and as a result, you know, looking for where
5 those areas of overlap themselves might be made more
6 efficient is certainly an initiative, corrective action
7 program as it relates to DNP, Deliver the Nuclear
8 Promise is one example of where we're actually working
9 with the industry in an area of overlap with the NRC and
10 representing our work to the NRC in our exchanges with
11 them, with regard to what our view of the new, you know,
12 the new version of corrective action is resulting in.

13 But there are so few areas of overlap that
14 the idea that there's a great deconfliction that could
15 occur between INPO and the NRC is not likely when you
16 look at the 15 functional areas that INPO is responsible
17 for evaluating in its plants during evaluations and peer
18 reviews and that we monitor on a continuum. Now for the
19 industry from both -- both from Atlanta and through our
20 visits to the industry.

21 They are kind of independent of but
22 complimentary to what the NRC is accomplishing.

23 DIRECTOR McCREE: So the questions keep
24 flooding in. Do you perceive the apparent reversal
25 among environmentalists on nuclear power and its

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1 ability to confront global warming as a lever that INPO
2 could and should use and are using, ostensibly to
3 advocate for nuclear power?

4 ADMIRAL WILLARD: So as I mentioned in my
5 remarks, there's a fine line that INPO walks between
6 advocacy and our independent role to evaluate and be
7 critical of performance within the industry. So as the
8 same time INPO grades industry, it can't be out
9 promoting, you know, the next industry necessarily.

10 Nuclear Energy Institute on the other hand,
11 NEI, is in fact the industry advocate. So if there's
12 a counterpart to INPO that is, you know, interested in
13 unraveling some of the challenges to our industry's
14 future, it's NEI. That stated, we're not unaware of
15 kind of a change, at least in the dialogue among the
16 non-government organizations, the environmental
17 organizations with regard to the clean power benefits
18 of nuclear power, and it's certainly true.

19 In fact, the safety benefits of nuclear
20 power are commendable and you know, should be part of
21 the overall dialogue as well. So there are attributes
22 that the nuclear industry, you know, we think certainly
23 demonstrate that should lend itself to a public dialogue
24 with regard to this industry and what benefits the
25 nation and the world can derive from it.

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1 As know, there's a nuclear renaissance
2 going on in much of the rest of the world, not so much
3 here in the United States yet. But it would be, you
4 know, certainly appropriate to bring all of the
5 beneficial attributes of nuclear to the table when those
6 decisions are being made, and the clean power, the
7 carbon free nature of our industry, we think the safety
8 performance of our industry are all attributes that are
9 more than commendable.

10 DIRECTOR McCREE: There's a question on
11 advanced technology fuel, and it's simply would you
12 share INPO's views or perspectives on the deployment of
13 such advanced technology fuel?

14 ADMIRAL WILLARD: It depends. I don't
15 know which advanced technology fuel we're talking
16 about, whether it's accident resistant fuel or whether
17 it's just advanced technology reactors that may not be
18 light water reactors. But again, it's an area that INPO
19 -- so INPO maintains its feelers into the industry with
20 regard to changes, technological advances and changes
21 that may be occurring out there.

22 We know that there are some utilities that
23 are very interested in the benefits that the industry
24 would derive from accident-resistant fuel, from you
25 know, more resilient fuel. INPO tracks fuel failures

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1 across the industry, with a goal towards zero fuel
2 failures within the industry, and we've made tremendous
3 advances since that initiative was created in about 2010
4 to now.

5 But there are still challenges at times
6 with fuel construction and challenges with some
7 dynamics within the reactors that are resulting in fuel
8 failures today, and it would benefit everyone to be past
9 those. So it's certainly an initiative that we pay
10 attention to. We are conducting assist visits where
11 fuel failures are related, and continue to work with the
12 industry to overcome that. We think that advanced
13 technology fuel approaches is still another way to
14 achieve that end state of zero fuel failures at any given
15 time across our industry ultimately.

16 DIRECTOR McCREE: There's a question
17 from an observer of your chart showing the life span or
18 life time of nuclear plants in this country. The viewer
19 indicated it wasn't clear whether it showed second
20 license renewal specifically. The question is what is
21 INPO's view on subsequent license renewal, that is life
22 beyond 60 years?

23 ADMIRAL WILLARD: Yeah. So the chart that
24 you saw were all of the current license status across
25 the industry, and the right hand side of that life span

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1 are the expiration of all those licenses, and it doesn't
2 include premature decommissioning. So it actually
3 reflects the plants that have closed, but that would be
4 the life span of our -- of the legacy industry should
5 all of the current licenses be executed to their
6 conclusion.

7 As I mentioned in the remarks, the slope of
8 that curve and the curve, the shape of that curve would
9 change should there be an additional license extension
10 to 80 years. But ultimately there's a life, you know,
11 a life span is a life span and whether or not that were
12 executed, we would still be managing the, you know,
13 backside of the overall industry profile.

14 INPO doesn't have a position necessarily on
15 additional license extension, other than to observe and
16 oversee as we have in the past that life extension is
17 executed with the rigor necessary to ensure safety
18 reliability on the other end.

19 That's the NRC's charter as well, and at the
20 end of the day we have very high confidence that if the
21 nation moves towards extending the licenses and life of
22 the legacy industry, that it will do so with all the
23 necessary rigor to ensure that it's conducted properly
24 and safely, and INPO will do its part in monitoring that
25 safe, reliable operation on the other side.

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1 DIRECTOR McCREE: Very good. Final two
2 questions. You noted that one -- in your presentation
3 that one of the pillars in maintaining excellence is
4 maintaining strong academics. What is INPO doing to
5 help support this pillar, particularly given the recent
6 sunsetting of INPO's scholarships and fellowships
7 program?

8 ADMIRAL WILLARD: Yeah. So a fair
9 question. INPO had a very modest contribution to
10 scholarships and fellowships in the nuclear area, and
11 as one of our own cost saving measures that was
12 eliminated.

13 We recognize that pure organizations like
14 Nuclear Energy Institute and the utilities themselves
15 far overshadowed what modest contribution INPO was
16 making at the time, and felt that the industry as a whole
17 and Nuclear Energy Institute in particular, were doing
18 more than INPO itself could do.

19 So there's my rationalization as to why we
20 eliminated that small amount of monies going towards
21 scholarships. But the importance of the, you know, the
22 academic underpinning of our industry is not trivial.
23 You know, we require technical curriculums across the
24 board and we recognize that nuclear curriculums have
25 been reduced across many of our universities.

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1 INPO has strong association with Georgia
2 Tech and other schools, you know, in the state of Georgia
3 around Atlanta, and we have a degree of reliance on the
4 young students that can apprentice and work with us,
5 both at the Institute and within the industry coming
6 from those strong programs.

7 So we are advocates of the program.
8 Whether or not our modest budget can afford to
9 contribute to that literally is a debate. But we
10 certainly advocate for a strong underpinning of
11 academic excellence in the United States, to be able to
12 support this and other high tech manufacturing
13 industries.

14 DIRECTOR McCREE: Thank you, and the
15 last question. You mentioned the loss of capabilities
16 as the number of nuclear power plants in the U.S. is
17 reduced. In the area of instrumentation and controls
18 at least, the number of dedicated nuclear suppliers has
19 already diminished dramatically from the 1970's,
20 leaving us dependent on -- more dependent on safety,
21 grade dedication of commercial products for safety
22 uses.

23 What is INPO's take on the possible
24 negative safety implications and what is INPO doing, if
25 anything, in this area?

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1 ADMIRAL WILLARD: So INPO has just as we
2 did with the international participant program, INPO
3 has had a supplier participant program for many, many
4 years, and the purpose of that has been similar to what
5 the original initiative was with international
6 participants, to draw suppliers into a forum where we
7 could talk about performance, nuclear standards, and we
8 could share the intellectual capital of INPO and the
9 analysis products of INPO with a broader base of vendors
10 that are supplying to our nuclear industry.

11 We certainly recognize the challenges that
12 we face today. Globalization now has a great many bits
13 and pieces of our nuclear systems being supplied by
14 foreign vendors.

15 The big castings are coming from foreign
16 vendors. The sub-suppliers and sub-sub-suppliers and
17 sub-sub-sub-suppliers are often from foreign vendors,
18 and as we move increasingly away from our relationships
19 over United States manufacturers into the foreign
20 domain, it becomes increasingly challenging to monitor
21 the quality of those parts.

22 That said, the nuclear industry itself and
23 the Nuclear Regulatory Commission, Nuclear Energy
24 Institute all have initiatives in place to monitor for
25 the quality of the parts that we're utilizing. And

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1 while it becomes -- it is an increasing challenge for
2 the industry, and as the industry ages and parts become
3 rarer for legacy plants, it will no doubt become an
4 increasingly challenging area.

5 It's an area that has all of our focus and
6 continues to be an area that the vendors themselves are
7 concerned about and attempting to mitigate. So I think
8 the -- recognizing it as a challenge, staying engaged
9 with it and staying engaged more broadly than just INPO
10 or any other single organization, is the way to handle
11 a challenge of that magnitude, that may be growing more
12 acute over time.

13 DIRECTOR McCREE: Admiral, thank you for
14 your presentation and responding to a number of very
15 challenging questions. Please join me in thanking
16 Admiral Willard.

17 (Applause.)

18 DIRECTOR McCREE: I know we completed a
19 few minutes early, but we're going to break now for
20 lunch, and I believe the technical sessions start up
21 again at 1:30, at 1330. Thank you for your attention.

22 (Whereupon, the above-entitled matter went
23 off the record at 11:46 a.m.)

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