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NUCLEAR REGULATORY COMMISSION

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Subcommittee, Draft Final Non-Power
Production Utilization or Facility
License Renewal Rulemaking

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

(ACRS)

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REGULATORY POLICIES AND PROCEDURES SUBCOMMITTEE

+ + + + +

WEDNESDAY

JANUARY 23, 2019

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ROCKVILLE, MARYLAND

+ + + + +

The Subcommittee met at the Nuclear Regulatory Commission, Two White Flint North, Room T3D50, 11555 Rockville Pike, at 8:29 a.m., Michael Corradini, Chairman, presiding.

COMMITTEE MEMBERS:

MICHAEL L. CORRADINI, Vice Chairman

RONALD G. BALLINGER, Member

DENNIS C. BLEY, Member

CHARLES H. BROWN, JR. Member

MARGARET SZE-TAI Y. CHU, Member

JOSE MARCH-LEUBA, Member

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GORDON R. SKILLMAN, Member

DESIGNATED FEDERAL OFFICIAL:

QUYNH NGUYEN

ALSO PRESENT:

ALEXANDER ADAMS, NRR

ROBERT BEALL, NRR

THERESA CLARK, NMSS

DUKE KENNEDY, NRR

THOMAS NEWTON, Public Participant

SEAN O'KELLY, Idaho National Laboratory*

*Present via telephone

P R O C E E D I N G S

(8:29 a.m.)

CHAIRMAN CORRADINI: The meeting will come to order.

This is a meeting of the Regulatory Policies and Practices Subcommittee of the Advisory Committee on Reactor Safeguards. My name is Mike Corradini, Chair of this subcommittee meeting.

ACRS members in attendance are Ron Ballinger, Gordon Skillman, Charles Brown, Jose March-Leuba, Margaret Chu, Dennis Bley. And I think we have Harold Ray on the phone line.

Quynh Nguyen of the ACRS staff is the Designated Federal Official for this meeting.

The subcommittee will hear from representatives of the staff regarding the Draft Final Non-Power Production Utilization or Facility License Renewal Rulemaking. Previously the committee commented regarding this rulemaking during our 632nd full committee meeting in 2016. Based on public comments, the staff has updated its rule.

The subcommittee will gather information, analyze relevant issues and facts, and formulate proposed positions and actions, as appropriate, for deliberation by the full committee.

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1 The ACRS was established by statute and is
2 governed by the Federal Advisory Committee Act, or
3 FACA. This means that the committee can only speak
4 through its published letter reports. We hold
5 meetings to gather information to support our
6 deliberations. Interested parties who wish to provide
7 comments can contact our offices requesting time after
8 the meeting announcement -- after the meeting
9 announcement is published in the Federal Register.

10 That said, we set aside some time for
11 extemporaneous comments from members of the public
12 attending or listening to our meeting on the phone
13 line. Written comments are also welcome.

14 In regard to early site permits, 10 CFR
15 5223 provides the Commission shall refer a copy of the
16 application of the ACRS to the committee and shall
17 report on portions of it.

18 The ACRS section of the USNRC's public
19 website provides our charter, bylaws, letter reports,
20 full transcripts of all full and subcommittee
21 meetings, including slides presented at the meeting.
22 The rules for participation in today's meeting were
23 previously announced in the Federal Register, and
24 we've received no written comments or request for time
25 to make oral statements from members of the public

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1 during today's meeting.

2 We have a bridge line established for
3 members of the public, interested members of the
4 public to listen in. To preclude interruption of the
5 meeting, the phone bridge line will be placed in a
6 listen-in only mode during the presentations and
7 committee discussions. We will then un-mute the
8 bridge line at a designated time to afford the public
9 an opportunity to make a statement or provide
10 comments.

11 At this time I request that meeting
12 attendees and participants silence their cell phones
13 and other electronic devices so we don't get any
14 beeps, or boops, or noises.

15 I also will mention to the members that
16 the microphones are always live. You cannot turn them
17 off, so minimize your extemporaneous comments to each
18 other, please.

19 A transcript of the meeting is being kept
20 and will be made available as stated in the Federal
21 Register notice. Therefore, we request that
22 participants in the meeting use the microphones
23 located through the room. The participants should
24 first identify themselves, speak with sufficient
25 clarity and volume so they may be readily heard. Make

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1 sure that the green light is on -- it will always be
2 on -- at the microphone before speaking.

3 We'll proceed. And I'll turn to Theresa
4 Clark, senior management of NMSS, to begin.

5 Ms. Clark.

6 MS. CLARK: Good morning. Thank you, Dr.
7 Corradini, and thanks for the time to be before the
8 committee in this even more intimidating space than we
9 usually are.

10 So, we're here today, as you mentioned, to
11 talk about what we lovingly refer to as the NPUF rule.
12 NPUF stands for non-power production or utilization
13 facility. You'll hear that acronym thrown around a
14 lot. And this has to do with license renewal as well
15 as some other things that our staff will get into.

16 So, over there in the witness box we've
17 got Bob Beall who is our senior rulemaking PM on this
18 rule. He's the project manager who's been leading it
19 throughout. He works in the Office of Nuclear
20 Material Safety and Safeguards with me where I'm the
21 deputy director of the Division of Rulemaking.

22 We also have Duke Kennedy who is the
23 acting branch chief in the Research and Test Reactor
24 Licensing Branch in the Office of Nuclear Reactor
25 Regulation.

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1 And Al Adams who is a senior project
2 manager in the same branch.

3 And we've got a number of working group
4 members and supporting staff who are here with us
5 today in case there's any additional questions. I'll
6 mention a few names now, and I'm sure there's others
7 who can contribute as well.

8 One of the key contributors, Duane
9 Hardesty, couldn't be with us today. But that's why
10 Duke's up there to speak so capably.

11 We've also got Michael Smith, Kevin Folk,
12 Kos Lois from NRR. We've got Tony Gomez from my staff
13 in NMSS; Howard Benowitz from RDC, Richard Clement
14 from NRO, and Mike Eudy from Research. So we've got
15 several people in case there's questions from the
16 committee.

17 So, what you should have before you is the
18 draft plan in a little package which includes draft
19 versions of a Commission paper, Federal Register
20 notice, and the regulatory guide which is actually
21 separate from the rule package that we've provided to
22 you, and number of other supporting documents that
23 help support the rule.

24 And as these folks will tell you, there
25 are nine different regulatory actions that are

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1 included in the draft final rule. And the most far
2 reaching of those is a recommendation to have a non-
3 expiring license. And I think you've heard about this
4 in our previous committee meetings.

5 This non-expiring license is consistent
6 with the Atomic Energy Act requirement to impose the
7 minimum regulation that's necessary for adequate
8 protection of public health and safety. It reduces
9 burden on licensees as well as on NRC staff. And it
10 maintains that level of public health and safety
11 that's important

12 So, there are several other items that
13 they'll go through with you as well. So, we look
14 forward to an informative interaction with you and to
15 the questions that you may have. And we want to thank
16 you for your review and your comments which have
17 helped us develop this package throughout the process.

18 We'll start off with Bob giving an
19 overview of the rule and then Duke will give a
20 detailed discussion of those nine actions. So, I'll
21 turn it over to Bob.

22 CHAIRMAN CORRADINI: Good. Bob.

23 MR. BEALL: Okay. Thank you very much.
24 Good morning, everyone.

25 So, we're here to talk about the draft

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1 final rule or the NPUF rule. So this draft final rule
2 is implementing the Commission's direction to the
3 staff to try to streamline and implement a more
4 efficient and effective process for non-power reactors
5 or NPUF that's focused on the current regulatory
6 framework that we have with these licensees.

7 We use innovative and transformative
8 approaches to address the current regulations that we
9 have for these licensees to come up with ways to
10 improve the license renewal process and streamline
11 both the way they interact with us and the way we
12 interact with them.

13 And so we've come up with nine rulemaking
14 objectives for draft changes to the regulations that
15 we'll be going over in a minute.

16 The proposed rule was published in march
17 of last year. It was out for a 75-day comment period.

18 We also had a public meeting to allow the
19 public and external stakeholders to ask questions of
20 us during that comment period. That was in May. We
21 received 16 comment submittals from the public and
22 some stakeholders. Some of them were from the TRTR
23 licensees, some of them from the general public.

24 And in general the comment submittals were
25 in support of the rulemaking actions, and they also

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1 had some I would say out-of-the-box recommendations of
2 how we can improve the process that we were looking at
3 for us to implement in the draft comment rule. And
4 Duke will be talking about one of those suggestions or
5 comments that we had on the package here in a minute.

6 So, with that I'm going to turn it over to
7 Duke, and he'll go over who the respective entities
8 are for this draft comment rule.

9 MR. KENNEDY: Okay. Good morning,
10 everybody.

11 Just as a point of clarification, Al Adams
12 and I will both be discussing the specific provisions
13 of the draft final rule. So I'll, I'll begin with an
14 overview of this graphic which is a generalization of
15 the facilities that are potentially impacted by this
16 rulemaking.

17 So, you can see here that we have two
18 classes of facilities per the Atomic Energy Act. We
19 have Class 103 and Class 104. And generally the Class
20 104 facilities are for research and development
21 purposes.

22 Also we have 104a licensees which are for
23 medical therapy. Currently we only have one such
24 licensee.

25 Under Class 103 we have a class of

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1 facilities for medical isotope production or
2 commercial radioisotope production and commercial
3 activities.

4 Part of the impetus for this rulemaking
5 was to bring new facilities under the current
6 terminology for non-power facilities. And so these
7 medical isotope facilities are one of the drivers for
8 the creation of this new term NPUF which includes
9 production facilities for medical isotopes.

10 So, as we go through the following slides
11 you'll see these three circles fade in and out to
12 indicate applicability of the different objectives of
13 the rule to these different types of facilities.

14 And just as another point of background,
15 currently we have 30 operating research reactors, one
16 operating testing facility, three facilities that have
17 permanently ceased operation and are in some stage of
18 decommissioning, and two facilities that have not yet
19 been constructed but have received construction
20 permits. Those are both for medical isotope
21 production.

22 CHAIRMAN CORRADINI: So just for my
23 edification, what's the testing facility, is it NIST?

24 MR. KENNEDY: It is NIST.

25 CHAIRMAN CORRADINI: Okay. And then the

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1 three that are in decommission status are?

2 MR. KENNEDY: General Electric has one
3 facility or two facilities, and General Atomics has
4 one. They're, one of them is currently --

5 CHAIRMAN CORRADINI: Oh, okay. These are
6 quite old facilities.

7 MR. KENNEDY: Yes.

8 CHAIRMAN CORRADINI: Okay. Okay. And
9 then for the committee, because some of us have been
10 pre, had a pre-brief so we can ask an intelligent
11 question on this one, you're going to come through and
12 talk about some of the changes or all of the changes
13 in the rule as you go through the nine. But I think
14 the major one that I see in this slide, unless I'm off
15 base, is the less than or greater than 1 rem TEDE.

16 I guess I have a question now for later,
17 and that is is the logic in choosing the accidents,
18 the postulated accidents that have to be considered to
19 determine that breakdown of greater or less than
20 remains the same in all of these facilities, it's just
21 a matter of how one classifies it now? Am I making
22 sense?

23 MR. KENNEDY: Yes.

24 CHAIRMAN CORRADINI: So when we get to
25 that point I'd like to at least investigate that

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1 because I guess I didn't catch that if there was some
2 change in the procedure or it was simply a matter of
3 classification differences.

4 MR. KENNEDY: I'll discuss these
5 particular changes in the following slides --

6 CHAIRMAN CORRADINI: Okay.

7 MR. KENNEDY: -- but it's just a matter of
8 classification.

9 CHAIRMAN CORRADINI: Okay. All right,
10 thank you very much.

11 MR. KENNEDY: Okay. One other point, and
12 we go to the next slide, is that you'll see text in
13 red on these slides and that indicates where there was
14 a change from the proposed rule.

15 So the first objective of the draft final
16 rule that I'd like to mention is the updating in the
17 terms and definitions. So, the main change from the
18 proposed rule has been that we have revised
19 definitions for non-power reactor, research reactor,
20 and testing facility. And, again, this is driven by
21 response to public comments or by the public comments.

22 So, the main change has been in the
23 definition of testing facility. I'll describe this in
24 the next two slides. But we've also made some changes
25 in the definition of research reactors and made

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1 conforming changes throughout the different parts of
2 the regulations to clarify the language that's used
3 for different types of facilities.

4 (Construction noise.)

5 CHAIRMAN CORRADINI: This is going to
6 happen all day long.

7 MR. KENNEDY: Should I stop speaking when
8 that noise happens or should I continue?

9 MEMBER BLEY: I think you should stop
10 because I can't hear you at all.

11 MEMBER SKILLMAN: Have any of the
12 definition changes resulted in a reduction in
13 protection? Have any changes in the terms or the
14 definitions dumbed down what was previously greater
15 defense to the health and safety of the public?

16 MR. KENNEDY: No.

17 MEMBER SKILLMAN: Thank you.

18 MR. KENNEDY: So, as I was saying, the
19 changes in the definitions, conforming changes have
20 been in various parts of the regulations. And the
21 objective is to improve clarity of which regulations
22 are applicable to the different types of facilities.

23 In the current regulations there are a
24 variety of terms used such as critical facility,
25 training reactor, testing facility, testing reactor.

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1 And the objective is to reduce the number of terms
2 that are used and to standardize as much as possible.

3 So in doing this we've responded, we've
4 created this definition of NPUF for non-power
5 production or utilization facilities. And this
6 captures facilities that were previously not captured
7 under the definitions, particularly the production
8 facilities, the medical isotope production facilities
9 that are in the licensing process now.

10 We also think this definition will capture
11 future technologies and future types of facilities
12 that can be licensed as Class 103 or 104 production or
13 utilization facilities.

14 Okay, next slide, please.

15 So this is the most substantial change
16 from the proposed rule in terms of the definitions.
17 And the definition of testing facility has been
18 revised based on a public comment from NIST. Here in
19 the first sub-bullet NIST's comment is partially
20 quoted. And they've asked to remove an arbitrary 10
21 megawatt threshold and apply instead a risk-based
22 approach to regulation of a testing facility.

23 So, NIST went on to say that "risk is best
24 quantified by accident analyses performed under a
25 licensing."

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1 And they recommended that the definition
2 of testing facility be changes to reference 1 rem dose
3 criterion which was proposed in the proposed rule for
4 defining research reactors, so, as a dose criterion
5 for research reactors.

6 CHAIRMAN CORRADINI: So let me ask my
7 question here. The procedure, whether I be a research
8 and test reactor, TRTR, in that regimen, or a testing
9 facility, how you identify the potential accidents and
10 how you do the analyses hasn't changed, it's a matter
11 of now you're applying this as a criteria for
12 classification? And changing it from a power to this
13 I assume didn't change any of the shifting of the
14 ground, but the anticipation is that there will be
15 something coming up that this would be important to
16 do?

17 In other words, all the test reactors, all
18 the research and test reactors are substantially less
19 than 10 megawatts I think.

20 MR. ADAMS: Correct. The only test
21 reactor right now is NIST at 20 megawatts. The 10
22 megawatt threshold we spent a lot of time looking for
23 a clearly spelled out technical basis for it. In
24 fact, it was discussed at the first meeting of this
25 committee back in the '50s, and we could not find a

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1 reason why 10 was picked versus 15 or another number.

2 CHAIRMAN CORRADINI: Okay.

3 MR. ADAMS: So, we decided that going to
4 a dose-based criterion was -- made more sense from a
5 understanding of what the risks were.

6 CHAIRMAN CORRADINI: Right. It makes a
7 lot more sense to me. But I just wanted to understand
8 the procedure and how you identify the accident test
9 relative to this is the same.

10 MR. ADAMS: The accident side is discussed
11 in NUREG-1537.

12 CHAIRMAN CORRADINI: Okay.

13 MR. ADAMS: Longstanding accidents. And
14 that has not changed.

15 CHAIRMAN CORRADINI: Okay. All right,
16 thank you.

17 MEMBER BROWN: So those are not subject to
18 a fire level issue, all those accidents?
19 Theoretically you could have a 1,000 megawatt testing
20 situation just as long as you met an accident
21 analysis. Which seems like there should -- there
22 would be some type of accident, you know, --

23 CHAIRMAN CORRADINI: But I think they
24 would then fit into, as Al was, if I understand Al's
25 explanation, they would fit into based on a dose-based

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1 analysis.

2 MEMBER BROWN: No, I understand that,
3 except I didn't see any discussion in the other parts
4 about were there other accidents explicitly at higher
5 power level that you should consider.

6 MR. ADAMS: Well, I mean --

7 MEMBER BROWN: If it's the same accident
8 sequences have been continuing to be used.

9 MR. ADAMS: Right. I mean there are,
10 there are obviously accidents that are based on power
11 level because power level leads to fission product
12 inventory, leads to decay heat. So the power level of
13 the reactor is still important. However, in the
14 design of the reactor there could be design features,
15 there could be engineered safety features that, that
16 reduce the, you know, the dose from the accident.

17 So we're looking at the entire design of
18 the facility and the consequences versus just one
19 attribute, power. Or in the case of the 1 megawatt
20 reactors, those three attributes which, again, it's
21 not clear why, you know, why 16 square inches was
22 picked for a facility in your reactor core, why that
23 was the cutoff.

24 So we, you know, we believe we're more
25 risk informed.

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1 And, you know, under the rules the way
2 things are done now, you can have a 1,000 megawatt
3 test reactor.

4 CHAIRMAN CORRADINI: Nothing stops.

5 MR. ADAMS: No, nothing stops you. When
6 you're above 10 megawatts, right, by today's rule
7 you're a test reactor.

8 CHAIRMAN CORRADINI: In fact, just for the
9 sake of --

10 MEMBER BROWN: I got it.

11 CHAIRMAN CORRADINI: -- the DOE is
12 considering their versatile test reactor. And they
13 may be in front of staff.

14 MEMBER BROWN: A virtual test reactor?

15 CHAIRMAN CORRADINI: Versatile. Versatile
16 not virtual.

17 MEMBER BROWN: Oh, versatile.

18 CHAIRMAN CORRADINI: And that will
19 probably be in front of the staff because they might
20 come through licensing. So this sort of
21 classification fits right in.

22 MEMBER BROWN: Okay, thank you.

23 MR. KENNEDY: Next slide, please.

24 So, based on the public comment from NIST,
25 the NRC made the determination that, as Al mentioned,

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1 with the 10 megawatt threshold, while it's generally
2 based on safety significance was not, the basis for
3 that determination is not well documented. Again, the
4 power level alone is not an indicator of the risk or
5 the potential dose from the facility.

6 And so we found that use of a more risk-
7 informed performance-based approach is an acceptable
8 path for how we classify testing facilities in the
9 future.

10 There is also a second part of the
11 definition of testing facility that seeks to preserve
12 an option for the Commission to make a determination
13 that a facility may pose a risk that's not totally
14 captured by the dose calculations themselves. And so
15 in the case of a facility that presented some new or
16 unique design that didn't have operating experience or
17 wasn't well understand in terms of past experience,
18 the Commission still has the option to decide that a
19 facility could be categorized as a testing facility
20 and apply the additional regulatory scrutiny that goes
21 along with that.

22 Okay, with that I'll turn it over to Al to
23 discuss the no-expiring license portion of the
24 proposed -- of the draft final rule.

25 MR. ADAMS: Good morning. I'll be talking

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1 about the next couple of slides.

2 So, the second objective of the rulemaking
3 was to eliminate license terms for certain NPUFs. The
4 Atomic Energy Act doesn't establish a license term for
5 Class 104 or 104c facilities, a or c facilities. The
6 term's only limited by 10 CFR 50.51(a) and 40 years or
7 less. And the staff currently licenses NPUFs for 20-
8 years terms for both renewals and initial licenses.

9 The staff did consider terms greater than
10 20 years but less than indefinite. But we determined
11 that with the addition of regular FSAR updates there's
12 no significant nexus between safety and the license
13 renewal process.

14 The regulations allow 40-year licenses.
15 And several licenses with 40-year terms were issued in
16 the late '50s and early '60s. The staff determined
17 that 40 years was too long of a time to go without an
18 SAR update, and we adopted a practice of 20-year
19 license terms.

20 This was made after a decision was made in
21 the 1970s that license renewal would be no longer a
22 simple administrative action.

23 The staff's experience with renewals shows
24 that even going 20 years without a formal process to
25 update the licensing basis documentation contributed

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1 to a loss of the licensing basis and contributed to
2 the last backlog of licensing renewals. Thus, the
3 staff concluded that longer license terms would
4 further aggravate difficulties that were experienced.

5 During the proposed rule phase it was
6 suggested that we both extend the terms of licenses
7 and require FSAR updates. However, feedback from
8 public meetings show that RPR licensees the community
9 would not support a proposal that included both FSAR
10 updates and license renewal for research reactors.

11 Staff agreed that both were not needed to
12 protect public health and safety.

13 The staff's view is that the non-expiring
14 license is consistent with the Atomic Energy Act
15 Section 104 to "impose only such minimum amount of
16 regulation under this Act to promote the common
17 defense and security, and protect the health and
18 safety of the public."

19 So the next two slides discuss how health
20 and safety of the public is maintained with a non-
21 expiring license.

22 MEMBER SKILLMAN: Al, before you go there.

23 MR. ADAMS: Certainly.

24 MEMBER SKILLMAN: It seems to me that the
25 integrity of the process with a non-expiring license

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1 hangs on the strength of the 50.59 process. First of
2 all, there are going to be updates, FSAR updates, plus
3 the 50.59 process where a licensee is required to
4 identify where there is a potential license change.

5 MR. ADAMS: Correct. That's one of the
6 tools. The 50.59 process would be captured by FSAR
7 updates. Any license amendments that were issued
8 would be captured by the FSAR updates.

9 MEMBER SKILLMAN: But more importantly,
10 50.59 is a forward-looking tool where the licensee
11 would have to evaluate what that licensee is doing to
12 determine whether or not what is being done changes
13 the license; correct? That's what 50.59 does.

14 MR. ADAMS: Right. It allows you to make
15 changes without Commission approval.

16 MEMBER SKILLMAN: But you have to
17 determine whether or not you have in fact changed your
18 license?

19 MR. ADAMS: That's true.

20 MEMBER SKILLMAN: Okay. Now here's where
21 I'm going with this. What obligates the licensee to
22 have qualified people performing 50.59?

23 MR. ADAMS: Well, one, the regulation
24 itself, that there's an assumption in the regulation
25 that you're going to do the 50.59s properly. And the

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1 inspection program specifically looks at 50.59s. And
2 there is a reporting requirement in 50.59 that the
3 licensee submit summaries of their 50.59 evaluations
4 to the staff.

5 So it's not, it's not a blind process
6 where the staff never looks in. So it's, it's
7 essentially a timing thing that we look in, you know,
8 at the 50.59 in the time frame it was done versus
9 maybe 20 years down the road, or 30 or 40 years.

10 MEMBER SKILLMAN: Thank you.

11 MEMBER BALLINGER: I have a comment that
12 I come from one of the places that has one of these
13 reactors. And there's a fair amount of turnover of
14 personnel. And I wonder whether as part of the public
15 comment, comments, anybody thought about with a non-
16 expiring license you may get to the point where you
17 get a complete staff turnover. And so it's a whole
18 new staff on the whole reactor.

19 And is there nothing now that kind of
20 forces the staff of these facilities to sort of re-
21 zero themselves to get up to speed? Maybe I'm not
22 using the right words --

23 MR. ADAMS: No, I --

24 MEMBER BALLINGER: -- but you get my point
25 I think.

1 MR. ADAMS: No, I know exactly what you're
2 saying. And, indeed, that was one of the strengths of
3 what we saw with, you know, not only is not a, you
4 know, it's a whole package, the non-expiring license,
5 the FSAR updates that we believe that the FSAR updates
6 will focus those staffs onto a better understanding of
7 the facility in a shorter time frame. And, indeed,
8 turnover of staff and students was one of our driving
9 factors.

10 MEMBER BLEY: Al, just to put this in
11 perspective. As you introduced this topic a few
12 minutes ago I think you said in the old process, both
13 at 40 years and even at 20 years you found by the time
14 of that renewal the licensee basis had either
15 deteriorated or was lost.

16 Is that -- did I hear you correctly?

17 MR. ADAMS: We saw instances of that where
18 --

19 MEMBER BLEY: So that means there were
20 substantial changes that weren't supported anywhere?
21 Is that what it means? I'm not sure what it means.

22 MR. ADAMS: That we saw SARs that did not
23 capture accurately what the facility looked like.

24 MEMBER BLEY: So in your opinion this is
25 an improvement?

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1 MR. ADAMS: Yeah, we believe that all of
2 this taken together will be a significant improvement
3 to safety, along with the reduction burden for both
4 the licensees and the NRC because it, you know, will
5 take every 20, 40 years a significant uptick in
6 resources to, you know, recapture what you lost.

7 In fact, one licensee came in and talked
8 to us about do they really need to, you know,
9 recapture their licensing basis? Could we, you know,
10 could we through simple observation make a
11 determination that the facility was safe.

12 We said that probably wasn't a good way to
13 go about it.

14 I believe we're on Slide 10 if there's no
15 other questions.

16 So this slide provides some of the
17 technical reasons based on --

18 MEMBER BROWN: Can I interrupt for a
19 question?

20 MR. ADAMS: Sure.

21 MEMBER BROWN: I jumped ahead a couple of
22 slides to the unlimited licenses. I remember reading
23 about that.

24 That's for the research reactors?

25 MR. ADAMS: That's for, right, that's for

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1 Class 104a and c research reactors.

2 MEMBER BROWN: Okay. But you have test
3 reactors and the medical isotopes, they maintain 40
4 year terms later?

5 MR. ADAMS: Yes. Testing --

6 MEMBER BROWN: So there's a
7 differentiation between the types of reactors and the
8 unlimited. Okay.

9 MR. ADAMS: Yeah, so --

10 MEMBER BROWN: I just wanted to make sure
11 I understood.

12 MR. ADAMS: -- so testing facilities and
13 commercial facilities, Class 103 or 5023 facilities --

14 MEMBER BROWN: Okay.

15 MR. ADAMS: -- will continue to have a
16 license term and will continue to go through
17 licensing.

18 MEMBER BROWN: Will they have the FSAR
19 requirements?

20 MR. ADAMS: Yes, and they will have the
21 FSAR requirements. So that small subset of licensees,
22 and right now, you know, there's three licensees in
23 that subset. We'll, you know, we'll be doing some
24 additional work but we believe the FSAR update is
25 important to do.

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1 MEMBER BROWN: Okay. Thank you.

2 MR. ADAMS: So this slide is presenting
3 the technical reasons based on design and operational
4 characteristics of Class 104 NPUFs other than testing
5 facilities to discontinue the licensing rule due to
6 their low risk. So this discussion is applicable to
7 medical therapy and research reactors. It's not
8 related o testing facilities or commercial medical
9 isotope facilities who will still be subject to
10 license renewal.

11 While commercial facilities may have some
12 of the attributes of non-commercial facilities,
13 potential pace and scope of commercial activities
14 justifies the additional scrutiny of the Class 103
15 licensing process.

16 So, under this rule, Class 104 NPUFs other
17 than testing facilities will have a maximum accident
18 dose criterion of 1 rem TEDE. These facilities
19 operate at low power levels, they have a small
20 inventory of fission product, and they operate at low
21 temperatures and pressures, presenting a low potential
22 radiological risk to the environment and the public.

23 These facilities are also simply in design
24 and operation and, therefore, the scope of age-related
25 concerns is limited.

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1 Staff found no significant aging issues
2 because the NRC currently imposes aging-related
3 surveillance on NPUFs versus technical specifications.

4 In addition, the design basis of these
5 facilities evolve slowly over time. The NRC receives
6 approximately five license amendment requests each
7 year from all the licensees combined. Further, on
8 average each of these licensees reports about five
9 50.59 evaluations per year.

10 Can I have Slide 11, please.

11 So, we continued, we considered the nexus
12 between license renewal and safety. When the first
13 power reactors are facing license renewal, research
14 reactor license renewal is already an established
15 process.

16 We looked at the framework that was being
17 developed for power reactor license renewals that
18 focused on the aging of structures, systems and
19 components important to continued safety.

20 We made a decision not to include research
21 reactors in the power reactor framework of Part 54
22 because we already had an established license renewal
23 process at that time. We also could not envision what
24 license renewal would encompass for NPUFs if limited
25 to just aging issues.

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1 So, the question is, without notable aging
2 issues what does taking a snapshot of a research react
3 or every 20 or 40 years contribute to safety? We came
4 to the conclusion that there was nothing of safety
5 importance. There are other processes in place to
6 ensure safety on a continuing basis. And the actions
7 we have taken or are proposing to take contribute more
8 to continuing safety than performing a license renewal
9 every 20 to 40 years for these facilities.

10 NUREG-1537 is our format and content
11 guidance for NPUFs. And it's the standard review plan
12 for the staff to renew licensing actions. It was
13 issued in 1996. And there's been two interim staff
14 guidance documents that were issued after that.

15 Prior to 1996 there was no comprehensive
16 guidance for either licensees or the staff in this
17 area.

18 As an entrance criteria to being ordered
19 into a non-expiring license all the facilities must
20 undergo a license renewal using the guidance of NUREG-
21 1537. This ensures a comprehensive and consistent
22 licensing basis using established guidance for the
23 licensees.

24 For the staff we have a licensing basis
25 that was reviewed and documented in a safety

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1 evaluation report using the standard review plan. So,
2 we have a solid documented basis of safety of the
3 facilities in a non-expiring license process.

4 The oversight and inspection program is a
5 comprehensive look at all aspects of facility
6 operations. Inspectors are on site up to several
7 times a year. Any deterioration of a licensee
8 performance will be discovered, documented, and
9 corrected.

10 Inspection results are reviewed for
11 adverse trends that could indicate new aging issues.
12 Licensees also report maintenance, which includes
13 component issues in your annual report, which would
14 allow the NRC to identify new aging issues if they
15 were to occur.

16 As such, the staff believes that
17 regulatory oversight and requirement for FSAR updates
18 in the final rule provide the safety benefits
19 currently afforded by the license renewal process, and
20 we believe even more.

21 MEMBER SKILLMAN: Was there pushback from
22 the licensees for that license renewal inspection?

23 MR. ADAMS: Well, there is not a license
24 renewal inspection. There's just a normal inspection
25 process which looks at, which looks at attributes that

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1 enter into showing the continued safety of the
2 facility.

3 MEMBER SKILLMAN: What I was imaging is
4 the licensees have been tardy or deficient for a long
5 time and all of a sudden they're being called to task
6 to, if you will, present their licensing basis.

7 MR. ADAMS: Yes.

8 MEMBER SKILLMAN: And they say, well gee
9 whiz, you know, that's a lot of work. I don't really
10 want to do that.

11 MR. ADAMS: There was a number of public
12 comments and a lot of discussion on it. Because the
13 entry requirements for a non-expiring license is that
14 NUREG--1537 license renewal, at the end of that
15 license renewal the licensing documentation is
16 brought up to date. The biggest task would be taking
17 out the answers to the RAIs and working them into the
18 narrative of the SAR so to speak.

19 So, most of the work was already done at
20 that, at that point because of license renewal. And
21 we expect after that first update, you know, because
22 of the slowly evolving licensing basis that will be,
23 you know, easy for the licensees to keep up.

24 MEMBER SKILLMAN: So let me ask my
25 question again. Was there pushback or was there

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1 general agreement that we're good with that?

2 MR. ADAMS: There was some pushback until
3 what we were proposing was fully understood. There
4 was some fear that this 5-year FSAR was just a stealth
5 license renewal every five years. And as we discussed
6 this with the community more they grew to understand
7 what we were trying to accomplish.

8 So I think at the end of the day the
9 feedback of the licensees is positive and the comments
10 from the licensees their comments were positive. And
11 if there's any, you know, licensees that are
12 representatives of a TRTR here I would invite them to,
13 you know, to give their opinion when that time comes.

14 MEMBER SKILLMAN: Okay, thank you, Al.
15 Thank you.

16 MR. ADAMS: Could we have Slide 12,
17 please.

18 So, for Class 103 NPUFs and testing
19 facilities the staff is proposing a new section 50-135
20 that would consolidate in one section the existing
21 regulatory requirements for license renewal for
22 current and future NPUF licensees licensed under
23 Section 50.22 and testing facilities.

24 The final rule would not impose any new
25 regulations on these facilities.

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1 Some minor changes were made to the final
2 rule, not in technical requirements but in the
3 administrative process as a result of comments and
4 staff review.

5 The final rule is making renewed operating
6 licenses for these facilities effective immediately
7 upon the date of issuance instead of 30 days after
8 issuance, as was in the draft proposed rule. This way
9 the applicants for the renewed license can propose a
10 schedule for implementation of the renewed license to
11 the extent that additional time is needed to make any
12 necessary and conforming changes to the facility
13 processes and procedures required by the applicable
14 conditions of their renewed license.

15 The final rule provides a substantially
16 similar result in this area as the proposed rule, but
17 also allows the NRC licensees additional flexibility
18 in the time of implementation.

19 Also, as written the proposed rule could
20 have unnecessarily restricted the license term for a
21 renewed NPUF license to less than 40 years. Section
22 103 of the Atomic Energy Act allows license terms of
23 up to 40 years. To address this issue the final rule
24 clarifies that renewed licenses are issued for a fixed
25 period of time not to exceed 40 years.

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1 At this point I'll turn it back to Duke
2 for the next dozen slides.

3 MR. KENNEDY: The next objective is to
4 provide updates periodically of the FSAR submittals.
5 So we have extended the applicability of 10 CFR
6 50.71(e) to NPUFs. And as was mentioned by Al, we
7 believe this, this requirement will allow the
8 licensing basis to be kept up to date in a manner that
9 it can better support our inspection program and
10 operator licensing program.

11 What we've seen in the past, as Al
12 mentioned, is covered by questions that were already
13 asked that the licensing basis in some cases is not
14 maintained as well as it could have been to support
15 licensing actions such as amendments and,
16 specifically, license renewal. So, we believe that
17 the 5-year frequency for providing FSAR updates will
18 allow the licensing basis to support future licensing
19 actions and NRC regulatory oversight better than it
20 currently does.

21 We selected the 5-year periodicity
22 considering the 2-year periodicity for power reactors
23 and the less frequent changes expected for NPUF
24 licensees. We believe that 5 years provides enough
25 flexibility for licensees to develop their own program

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1 for updating their FSARs and submitting the to the NRC
2 without being overly burdensome by provide very
3 frequent updates.

4 We've also developed a regulatory guide to
5 support licensees in performing these updates. And so
6 it goes over explicitly what will be required of
7 licensees for their first FSAR update which would
8 follow their initial licensing. So when the license
9 is issued they'll have 5 years to submit an update to
10 the FSAR that incorporates all of the requests for
11 additional information and other supplements to the
12 application during the licensing process.

13 Following that, licensees will be required
14 to submit periodic FSAR updates not to exceed 5 years.
15 And the reg provides guidance on what information to
16 include in those types of updates as well as the
17 administrative process for submitting them to the NRC.

18 Next please.

19 The next objective is to amend the timely
20 renewal provision. So, currently licensees are given
21 30 days to submit their license renewal application
22 prior to the expiration of their existing license.
23 And we found through the last round of license
24 renewals that 30 days was not an adequate amount of
25 time for NRC to make a final determination on the

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1 acceptability of that application or whether the
2 license could be renewed.

3 In the final rule, the draft final rule,
4 we have a 2-year time frame for submission of a
5 license renewal application before expiration of the
6 existing license. And we believe that this provides
7 adequate time for the NRC staff to perform its
8 acceptance review as well as to go through the
9 detailed technical review and either issue -- and
10 issue a renewed license based on that application
11 before the existing license expires.

12 As you're aware, some licensees were
13 timely renewal for many years beyond the expiration of
14 their current licenses during the last round of
15 license renewal. And we're seeking to avoid that
16 situation in the future.

17 One change from the proposed rule to the
18 draft final rule is that we are maintaining the 30-day
19 timely renewal requirement for certain facilities.
20 This is because of one special case in which a
21 licensee will be required to submit their renewal
22 application in the time period between when the final
23 rule is issued and between the expiration of its
24 current license.

25 If the rule were issued as it was

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1 proposed, timely renewal would not even be an option
2 for that licensee. In this case we expect that the
3 license application would be due approximately one
4 year after publication of the rule, in which case the
5 2-year limit would not allow them to go into timely
6 renewal at all. So, for this one licensee we kept th
7 30-day provision so that they can continue to benefit
8 from timely renewal and not be inordinately impacted
9 by the final rule.

10 MEMBER BROWN: Is that are they specified
11 and you call that a renewal or is it a generalized 30-
12 day?

13 MR. KENNEDY: It's a generalized 30 days,
14 30-day provision that will only be applicable to this
15 licensee by the circumstances, by the facts.

16 MEMBER BROWN: Is it written down is what
17 I'm trying to say, that only one guy has this
18 exception?

19 MR. KENNEDY: The actual facility is --

20 MEMBER BROWN: That one licensee has this
21 exception?

22 MR. KENNEDY: The licensee is not called
23 out in the regulations. The regulations --

24 MEMBER BROWN: The others could then try
25 to take advantage of the 30 days?

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1 It just seems to be inconsistent. I mean,
2 you're the NRC, you could easily tell people, yeah,
3 it's in the rule but, yeah, you've got --

4 MR. ADAMS: Well, the 30-day rule, the 30-
5 day rule exists in the regulations now. What we've
6 done is we've taken some facilities out of that 30-day
7 bin and put them in the new bin. So this one facility
8 remains in the 30-day bin mainly because they are
9 within two years of --

10 MEMBER BROWN: I understand that. It's
11 just that nobody else can now piggyback on this?

12 MR. ADAMS: No.

13 MEMBER BROWN: Okay. That's my question.

14 MR. ADAMS: Yes.

15 MEMBER BROWN: Making sure there was a
16 line in the sand somewhere.

17 MR. ADAMS: Correct.

18 MR. KENNEDY: No, essentially it's
19 structured so that once this licensee goes through
20 renewal no other licensees will be able to enter into
21 this provision.

22 MEMBER BROWN: Okay.

23 MR. ADAMS: Right. Our research reactor
24 licensees. The 30-day provision is still on the books
25 for, say, certain materials licensees and other

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1 licensee groups but not for research reactors or
2 NPUFs.

3 MEMBER SKILLMAN: Duke, when you were
4 explaining the logic her you mentioned that there was
5 attention given to prevent licensees from going into
6 their, if you will, a period of extended operation
7 without a valid license. And what comes quickly to my
8 mind is what the agency and the licensee went through
9 at Indian Point where those plants drifted into beyond
10 their expiration, and they were provisional. And, you
11 know, it was quite a, quite a legal effort on both
12 sides to find a remedy to that.

13 What is in this rule change for NPUFs to
14 prevent that same type of miserable outcome from
15 occurring?

16 MR. KENNEDY: There's nothing that would
17 prevent it from happening. But the expectation is
18 that by getting the renewal application further in
19 advance that there will be a much higher likelihood
20 that we will actually be able to make the final
21 determination before that happens.

22 MEMBER SKILLMAN: That's fair enough.
23 Okay.

24 MR. KENNEDY: And every license we
25 renewed, you know, in the current round that started

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1 in the late 1990s every one of them expired on time.
2 That it was only they were only continued to be valid
3 licenses because the applications are in 30 days ahead
4 of time. And 30 days is not enough time for the staff
5 to do an acceptance review, get, you know, if there
6 are shortcomings get those shortcomings corrected and
7 get, and get a better application on the docket.

8 So we would have to, you know, accept
9 whatever came in the door and through the RAI process
10 slowly correct the shortcomings in the application,
11 which was -- at times could be very time consuming.

12 MEMBER SKILLMAN: Thank you.

13 MR. KENNEDY: Next slide, please.

14 The next objective provides an accident
15 dose criterion for research reactors. Again, there's
16 no significant change in the draft final rule from the
17 proposed rule.

18 But just as a brief background, the NRC
19 has been applying the dose limits in 10 CFR Part 20 to
20 accidents at research and test reactors. And it was
21 recognized many years ago in 1972 by the Atomic Safety
22 and Licensing Board that these are unduly restrictive
23 for accident situations at research and test reactors.
24 However, until now there has been no action to set
25 new dose criterion specifically for research reactors.

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1 So the 1 rem dose criterion that was
2 proposed and that exists in the draft final rule is
3 based on the Environmental Protection Agency's
4 protective action guidelines for releases during
5 nuclear accidents, radiological accidents.

6 And the protective action guidelines do
7 not recommend any actions, or they're silent on
8 recommendations when the expected dose is below 1 rem.
9 So this was chosen as threshold for research reactor
10 accidents. But there are no recommended protective
11 actions below that threshold that provide adequate
12 protection of health and safety.

13 Facilities certainly are allowed to take
14 actions below that threshold but it's just not
15 recommended, no recommendations from the EPA in that
16 respect.

17 So the change between the proposed rule
18 and the draft rule is really just to relocate where
19 these, where this dose criterion sits in the
20 regulations just to improve clarity that this
21 criterion is applicable to research reactors and that
22 it's applicable not just in calculations related to
23 our application for a construction permit, but that it
24 also needs to be explicit and finalized in the
25 operating license application as well. So it's just

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1 been moved for clarity. The substance, the basis has
2 not changed.

3 Next please.

4 Okay. The seventh objective was to extend
5 the applicability of 10 CFR 50.59 to NPUFs that are
6 undergoing decommissioning regardless of their
7 decommissioning status. And essentially what this
8 means is that even if the fuel is removed from an NPUF
9 they'll still be able to use the provisions of 50.59
10 to make changes to their safety analysis report,
11 procedures, and so on.

12 In the current regulations they are not
13 allowed this. And we have been incorporating a
14 license condition that essentially provides them the
15 flexibility of 50.59. However, that just including
16 that license condition adds additional burden. And to
17 streamline that we've proposed to change 50.59 to
18 allow NPUFs in decommissioning to take advantage of
19 that process for making changes.

20 There was no change here between the
21 proposed and draft final rule.

22 Next please.

23 The next objective is to clarify existing
24 environmental reporting requirements. In the past,
25 for licensing actions and other reasons, collecting

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1 environmental information from licensees has been done
2 under 51.41. And the new requirements in the draft
3 final rule just clarify how the NRC will collect the
4 information.

5 There are no new information collection
6 requirements and there have been no changes from the
7 proposed rule. We think this just improves
8 consistency and clarity of Part 51 and allows us to
9 get the information we need and for licensees to
10 respond with better certainty.

11 MEMBER BROWN: Can I stop to ask a
12 question?

13 MR. KENNEDY: Sure.

14 MEMBER BROWN: The applicability of 50.59
15 after decommissioning is there a safety reason for
16 wanting 50.59 type rules after fuel is removed and off
17 site?

18 MR. ADAMS: The answer is, the answer is
19 yes. So this was a sort of an error that was made
20 when the rule language was rewritten. And, for
21 example, back when that happened I had a --
22 decommissioning plans were put in place by order, I
23 actually had to write an order that allowed a facility
24 to use disposable protective clothing versus reusable
25 protective clothing.

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1 So the answer is yes, you know, you still
2 need to make changes to your -- to the SAR and
3 procedures, especially if you're go into
4 decommissioning. And not having 50.59 available means
5 you've got to come to the NRC each and every time.

6 MEMBER BROWN: So mostly due to
7 contamination type issues, correct, as opposed to
8 overall type of conditions?

9 MR. ADAMS: Sure. And, you know, and
10 procedures on, you know, how to physically take the
11 facility apar. So there's a lot of activities that
12 can occur under 50.59 when you're in decommission.

13 MEMBER BROWN: Okay. Thanks.

14 MR. KENNEDY: Okay. Finally, we, in the
15 draft final rule we maintain the proposed rule
16 provision to eliminate financial qualification
17 information submission requirements at the time of
18 license renewal. And this is consistent with how
19 power reactors are treated.

20 It was found in previous reviews during
21 license renewal that the financial information
22 submitted by licensees did not have any great
23 contribution to the staff's determination of whether
24 a renewal application was acceptable or not. So to be
25 consistent with what's done for power reactors, and

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1 recognizing that we maintain safety through oversight
2 programs, would check for financial driven degradation
3 and safety. We believe that removal of the
4 requirement to submit this financial information at
5 license renewal is adequate to protect public health
6 and safety.

7 MEMBER BROWN: Okay. So let me follow
8 that up a little bit. I didn't chase this. But I
9 thought originally the financial requirements were
10 there to ensure that a licensee could not only operate
11 the plant but could shut it down and clean up the
12 place afterwards. Seems like that still ought to be
13 important.

14 MR. ADAMS: Well, that still is important,
15 that the requirements of 50.75, 50.82 for
16 decommissioning are not changed in that licensee, so
17 --

18 MEMBER BROWN: So that covers this in that
19 regard?

20 MR. ADAMS: Right. This is only that the
21 licensee, say, at license renewal would have to give
22 us information here's where the -- normally it was the
23 first 5 years of license renewal, here's where we're
24 going to get our money from, here's how we're going to
25 spend our money, and this is why we're going to be

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1 from a financial point of view viable.

2 So it doesn't change the decommissioning
3 funding insurance regulations.

4 So we're at Slide 19.

5 And so this summarizes the change from the
6 final rule or from the draft rule to the final rule as
7 a result of staff comments and other considerations.
8 So these are the most significant changes.

9 So, we revised the proposed definition of
10 no-power production or utilization facility to exclude
11 production facilities designed or used primarily for
12 the formation of plutonium, or uranium-233, or
13 designed or use for the separation of the isotopes of
14 plutonium.

15 Based on a comment from NIST, we revised
16 the existing definition of non-power reactor, research
17 reactor, and testing facility to base the definitions
18 on radiological risk rather than reactor power level.
19 This is probably the most significant change we made
20 from the proposed rule.

21 Where appropriate we made conforming
22 changes to terms and definitions throughout 10 CFR
23 Chapter 1 to add, correct, or standardize terminology
24 and definitions.

25 Proposed 10 CFR 50 at 135 was revised so

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1 that renewed licenses would be effective immediately.

2 Time for the licensee to implement the
3 renewed license would be determined on a case by case
4 basis instead of by rule, allowing more licensee
5 flexibility in operation.

6 We also clarified proposed 50.135 to
7 maintain up to a 40-term for renewed licenses. The
8 wording of the draft regulations inadvertently could
9 limit license terms to 30 years.

10 We also maintained the 30-day timely
11 renewal provision for facilities licensed under
12 Sections 104a and c of the Atomic Energy Act that
13 still needed to undergo license renewal to be subject
14 to a non-expiring license.

15 Finally, we revised the location within 10
16 CFR 50.34 of the accident dose criterion. We realized
17 we could place the criterion in a section of 50.34
18 that would allow great clarity in the application of
19 the criterion.

20 Next slide, please.

21 So, this slide is just a summary of the
22 nine objectives, the nine rule change areas in the
23 NPUF rule, showing facilities each of the changes are
24 applicable to.

25 I'd like to take a minute to recognize and

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1 thank the working group for this rulemaking. They put
2 many hours carefully developing the documents that
3 were given to you. And they spent a lot of time going
4 through the public comments to make sure that they
5 were carefully considered and intelligently responded
6 to.

7 With this, I'll turn the discussion back
8 to Bob to discuss the schedule for the rule as we move
9 forward.

10 MR. BEALL: Okay. Thanks, Al.

11 So, in parallel with this committee's
12 deliberations of this draft final rule the staff is
13 also moving the package through concurrence through
14 our NRC agency management. We will be back in front
15 of the full committee, ACRS Committee, during the week
16 of February 4th. I think we're scheduled for February
17 7th is the current date we're planning on coming back
18 to the full committee to present the final rule again.

19 We will have one more public meeting to
20 discuss the implementation schedule for this draft
21 final rule with the public. That's going to be in
22 late February.

23 And the entire draft final NPUF rule
24 package is due to the Commission in June of this year.
25 And we're hoping to issue the draft of the final rule

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1 sometime in early 2020.

2 With that we would like to address any
3 additional questions the committee may have.

4 CHAIRMAN CORRADINI: Okay. Questions by
5 the committee?

6 (No response.)

7 CHAIRMAN CORRADINI: All right. Why don't
8 we turn to the in-room audience. Are there any
9 comments from members of the public?

10 MR. NEWTON: Hi. I'm Tom Newton from NIST
11 Center for Neutron Research. I just wanted to kind of
12 put my perspective and also since I'm a member of the
13 TRTR Executive Committee, we've had a lot of
14 discussion about this proposed rule.

15 We believe if it's properly implemented it
16 is a win/win situation, both for the NRC and for the
17 licensee. It will reduce burden and help us to keep
18 our facilities up to date, our SARs up to date. And
19 we support this rule.

20 CHAIRMAN CORRADINI: Okay, thank you.

21 Any other comments from anyone in the
22 room?

23 MR. O'KELLY: This is Sean O'Kelly.

24 CHAIRMAN CORRADINI: Okay, hang on.

25 MR. O'KELLY: I'm with TRTR staff.

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1 CHAIRMAN CORRADINI: Anybody else in the
2 room?

3 (No response.)

4 CHAIRMAN CORRADINI: Okay. Now we're
5 turning to the phone.

6 MR. O'KELLY: Oh, sorry.

7 CHAIRMAN CORRADINI: That's all right. Go
8 ahead.

9 MR. O'KELLY: We've also had a lot of
10 discussions in TRTR. And I want to thank --

11 CHAIRMAN CORRADINI: Can you repeat who
12 you are and I identify and then speak a little louder,
13 please.

14 MR. O'KELLY: I'm sorry. Sean O'Kelly,
15 the TRTR Chairman this year. I work at the Idaho
16 National Laboratories.

17 CHAIRMAN CORRADINI: Hi, Sean.

18 MR. O'KELLY: We want to thank the NRC
19 staff on working with TRTR to get the guidance out so
20 the clarity of what a 5-year FSAR update would look
21 like. One of the committee members mentioned that the
22 high turnover at universities has been a problem.

23 I'd like to express support for the NRC
24 staff to assure that they also get recognized that
25 they've had turnover also. And it's, there has to be

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1 four or five people on either side and experience from
2 either side of the licensing.

3 Thank you.

4 CHAIRMAN CORRADINI: Thank you. Are there
5 any comments on the phone line?

6 (No response.)

7 CHAIRMAN CORRADINI: Okay, hearing none,
8 why don't we close the phone line.

9 Any final comments by members of the
10 committee?

11 We're going to take this up in February.
12 And we'll have a shorter, maybe similar discussion in
13 terms of time in front of the full committee.

14 All right, thank you very much. We're --

15 MEMBER BLEY: I have a question.

16 CHAIRMAN CORRADINI: Go ahead.

17 MEMBER BLEY: For you, Mr. Chairman.

18 CHAIRMAN CORRADINI: Yes, Member Bley.

19 MEMBER BLEY: We haven't done, we haven't
20 done, actually done a new rule in a while. I'm
21 thinking of the process. In February we will give our
22 comments on the draft final rule. And then the
23 rulemaking will proceed. Is that correct?

24 And then at some point in the future will
25 we see this again?

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1 MR. BEALL: No. After the full committee
2 we will -- if you have any comments you'll of course
3 address those in your letter. That's the formal
4 process.

5 And the staff, once we get your formal
6 letter the staff will respond to that letter and
7 incorporate any comments you have or address them
8 appropriately in a letter back to the, to the
9 Commission.

10 CHAIRMAN CORRADINI: So I guess Dennis'
11 question was we're not going to see the rule in its
12 final form for one last go?

13 MR. BEALL: That's correct. After the
14 full committee review you will not be seeing the rule
15 again.

16 MEMBER BLEY: And really the only thing
17 happens after that is whatever the Commission does?

18 MR. BEALL: Yes, sir.

19 MEMBER BLEY: Okay. Thank you.

20 CHAIRMAN CORRADINI: Okay. With that I
21 think we're adjourned.

22 (Whereupon, at 9:30 a.m., the above-
23 entitled matter was adjourned.)

24

25



ACRS Subcommittee Meeting:

Non-power Production or Utilization Facility (NPUF) License Renewal Rulemaking

January 23, 2019

NRC Staff Presenters

- Robert Beall, NMSS: Rulemaking PM
- Duane Hardesty, NRR: Technical Lead
- Al Adams, NRR: Senior Project Manager

Purpose of the NPUF Final Rule

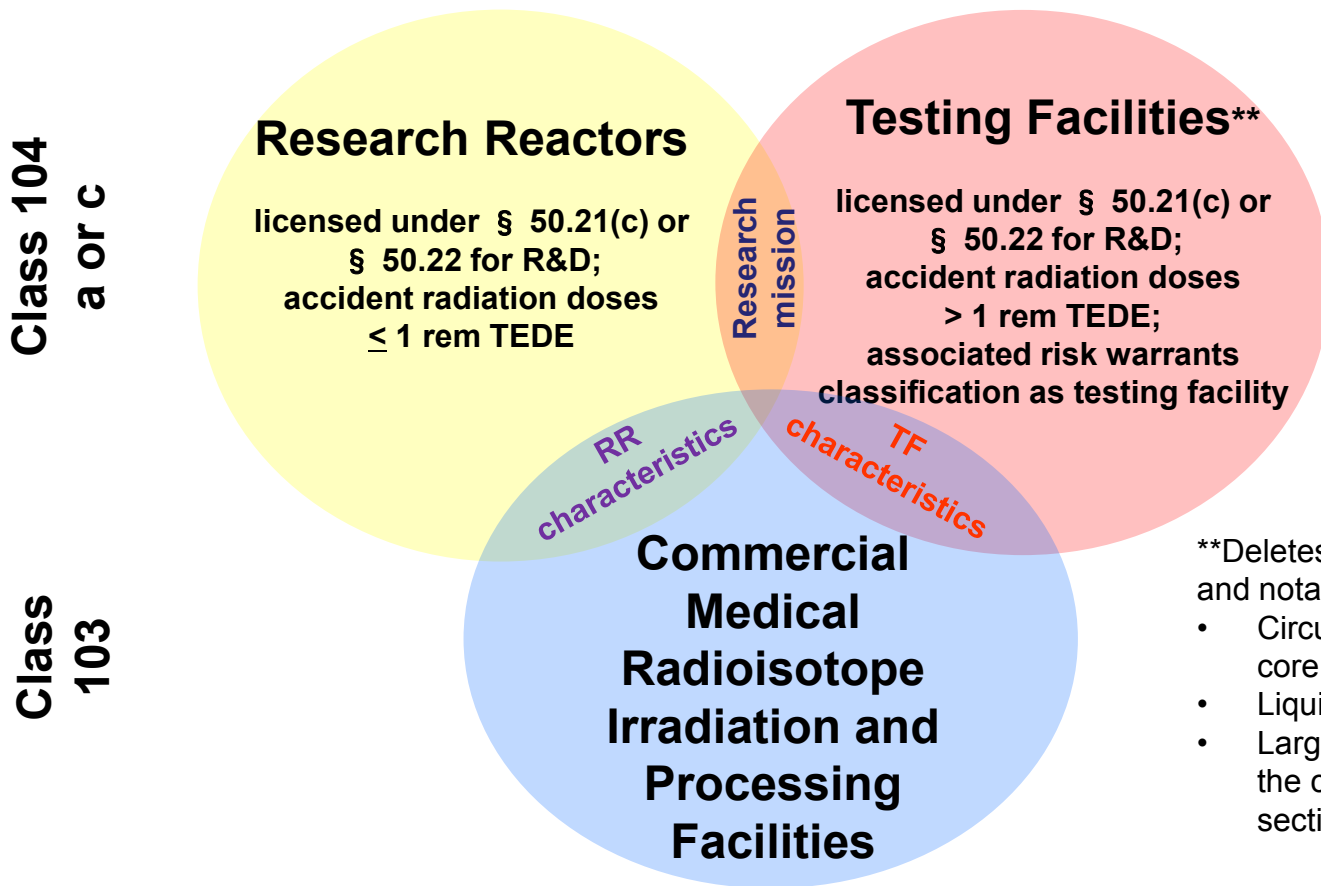
- Implement Commission direction to streamline the license renewal process by establishing a more efficient, effective and focused regulatory framework
- Use innovative and transformative approaches to address existing shortcomings in the current regulations for non-power licensees

⇒ 9 rulemaking objectives

Public Comments on the NPUF Proposed Rule

- Proposed rule was published for comment on March 30, 2017
 - 75-day public comment period
 - Public meeting was held on May 24, 2017
 - Received 16 comment submissions
 - Public comments generally supported the proposed rulemaking and recommended alternative approaches to certain aspects of the rule

Relationship of NPUF Entities (Post-Final Rule)

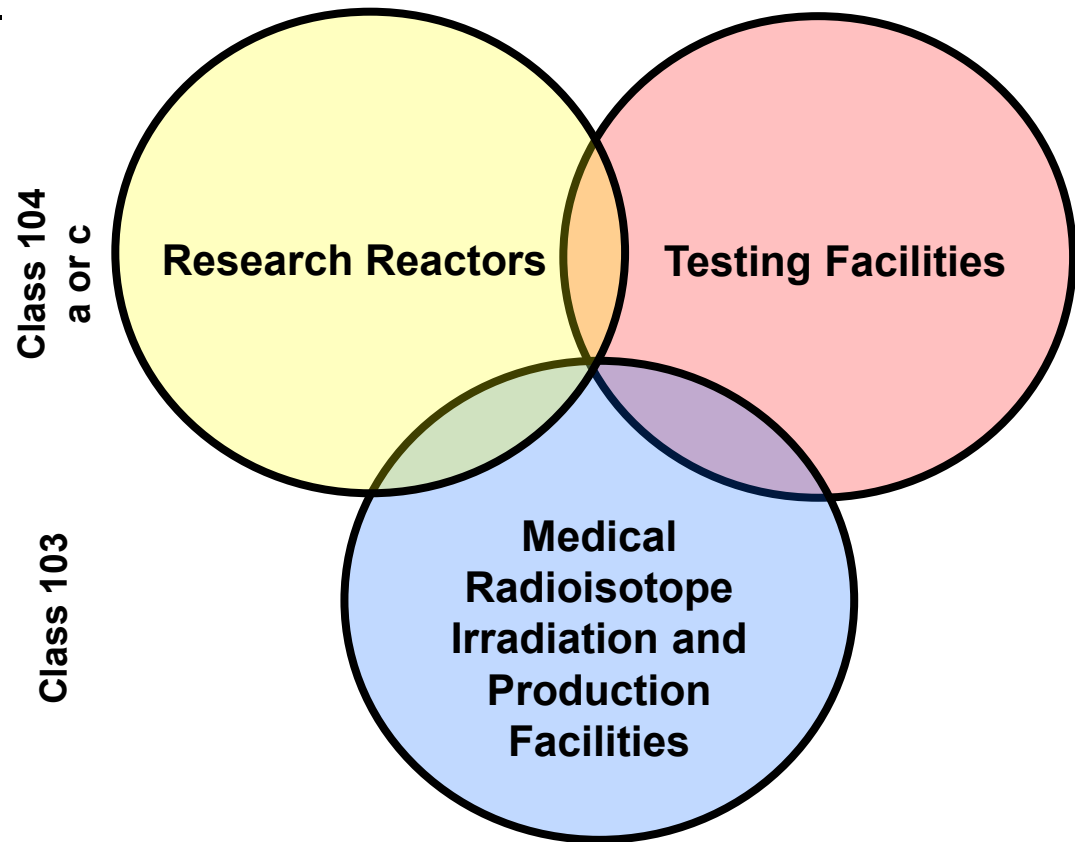


**Deletes previous power levels and notable safety considerations:

- Circulating loop through the core used for fuel experiments
- Liquid fuel loading
- Large experimental facility in the core (> 16 in² in cross-section)

1. Update Terms and Definitions

- Establish a single term (“non-power production or utilization facility”) to capture all non-power facilities licensed under part 50
- **Revise definitions for “non-power reactor,” “research reactor,” and “testing facility” in response to public comment and make conforming changes***
- Ensure clarity and consistency for the applicability of NPUF regulations



* Text in red are changes from the proposed rule.

1. Update Terms and Definitions

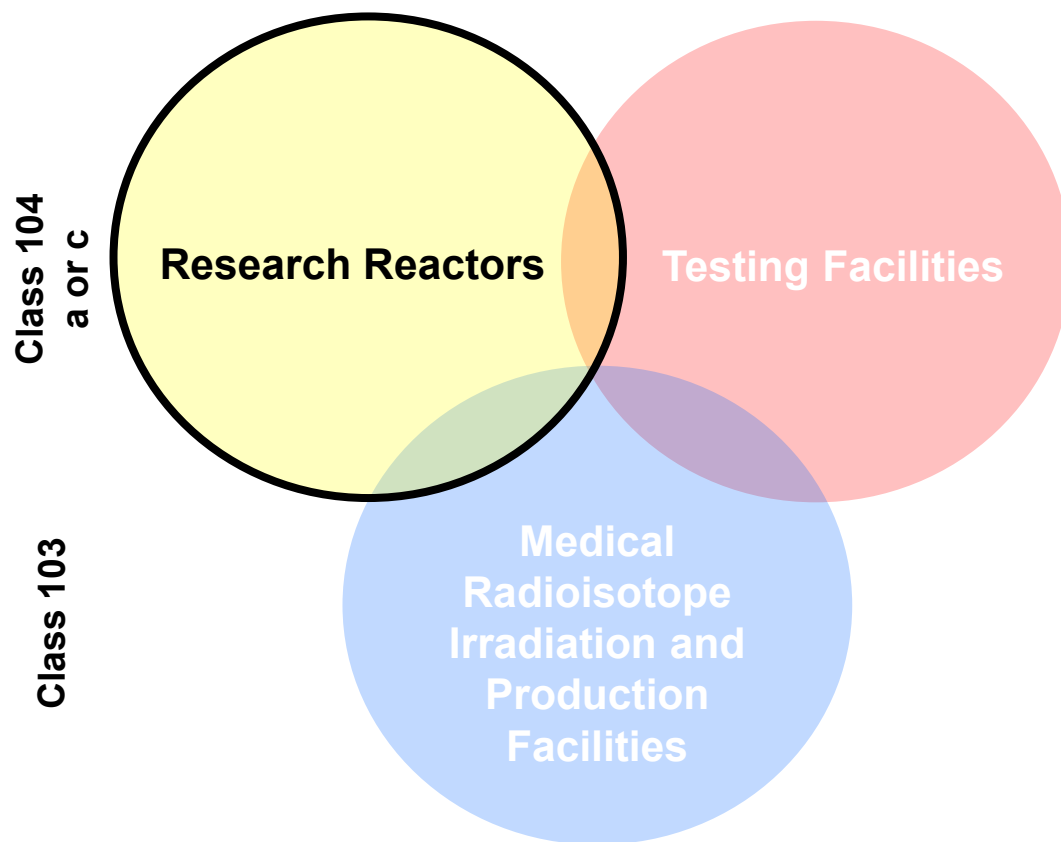
- National Institute of Standards and Technology public comment
 - Revise definitions of “testing facility” and “research reactor” to “remove the arbitrary 10MW(t) threshold, and apply, instead, a risk-based approach to its regulation of a testing facility.”
 - “... risk is best quantified by accident analyses performed under a licensing safety analysis”
 - Recommended definitions refer to the proposed accident dose criterion of 1 rem (0.01 Sv)

1. Update Terms and Definitions

- NRC staff determination
 - 10 MW(t) threshold, while generally based on safety significance, is not documented.
 - Prescriptive power thresholds do not account for the safety features that are engineered into the facility design and those barriers that must be breached during an accident before a release of radioactive material to the environment can occur.
 - Power thresholds do not accurately represent the risk associated with a particular facility.
 - Use of a postulated accident dose is a more risk-informed, performance-based approach.

2. Eliminate License Terms

- Exempt Class 104a and 104c NPUFs, other than testing facilities, from 40-year fixed term in 10 CFR 50.51
- No license term specified in AEA for Class 104 NPUFs
- Consistent with AEA's minimum regulation standard
- Reduce burden for licensees and NRC, but maintains public health and safety



No Notable Safety Considerations

- Accident dose criterion of 1 rem (0.01 Sv) TEDE or less
 - small fission product inventory
 - small radiological consequence for maximum hypothetical accident
- Low energy systems
 - low operating power and temperatures
 - minimal decay heat
- No significant aging considerations
 - simple designs
 - proactive aging management / aging-related surveillance requirements
 - loss of coolant is an analyzed condition
- Slowly evolving licensing basis
 - Very low number of design changes each year
 - Few rulemakings apply

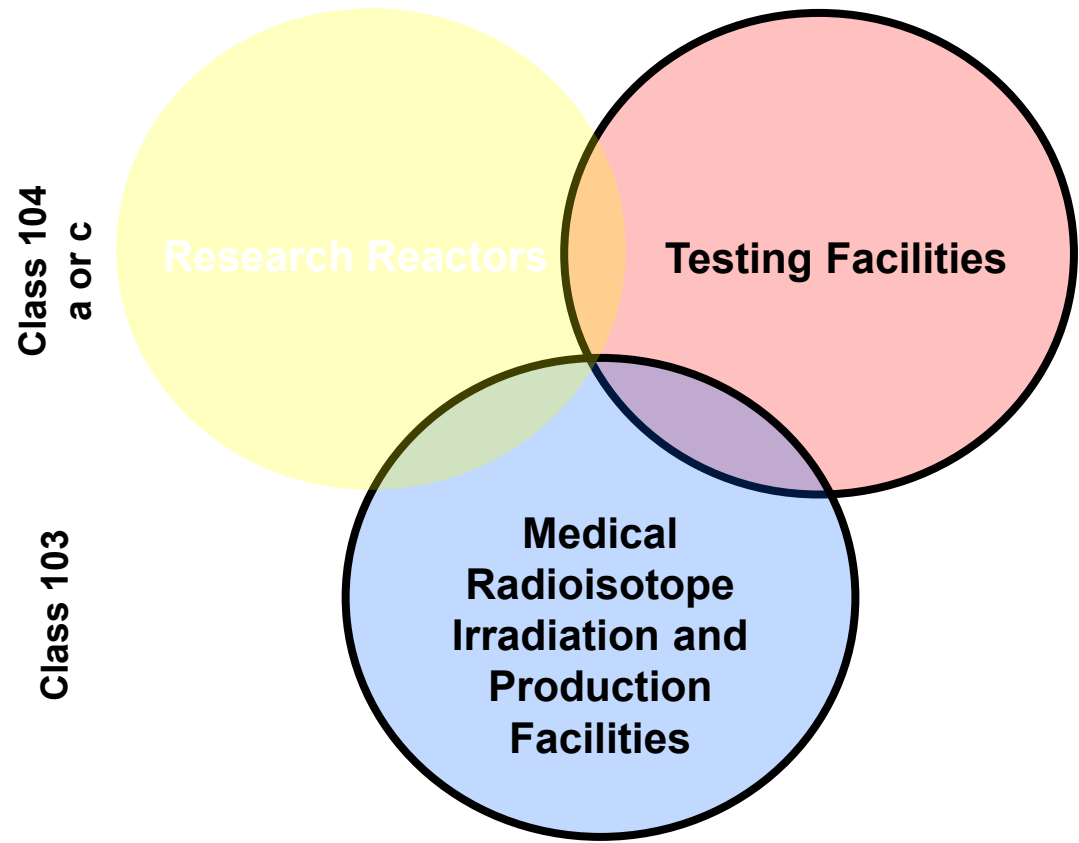
Maintaining Safety without License Renewal

Class 104a or c, except testing facilities

- **NUREG-1537**
 - License renewal under NUREG-1537
- **Inspection program**
- **Technical specifications**
- **Existing reporting requirements**
 - Safety issues with SSCs
 - Maintenance activities
- **FSAR Update rule requirement**

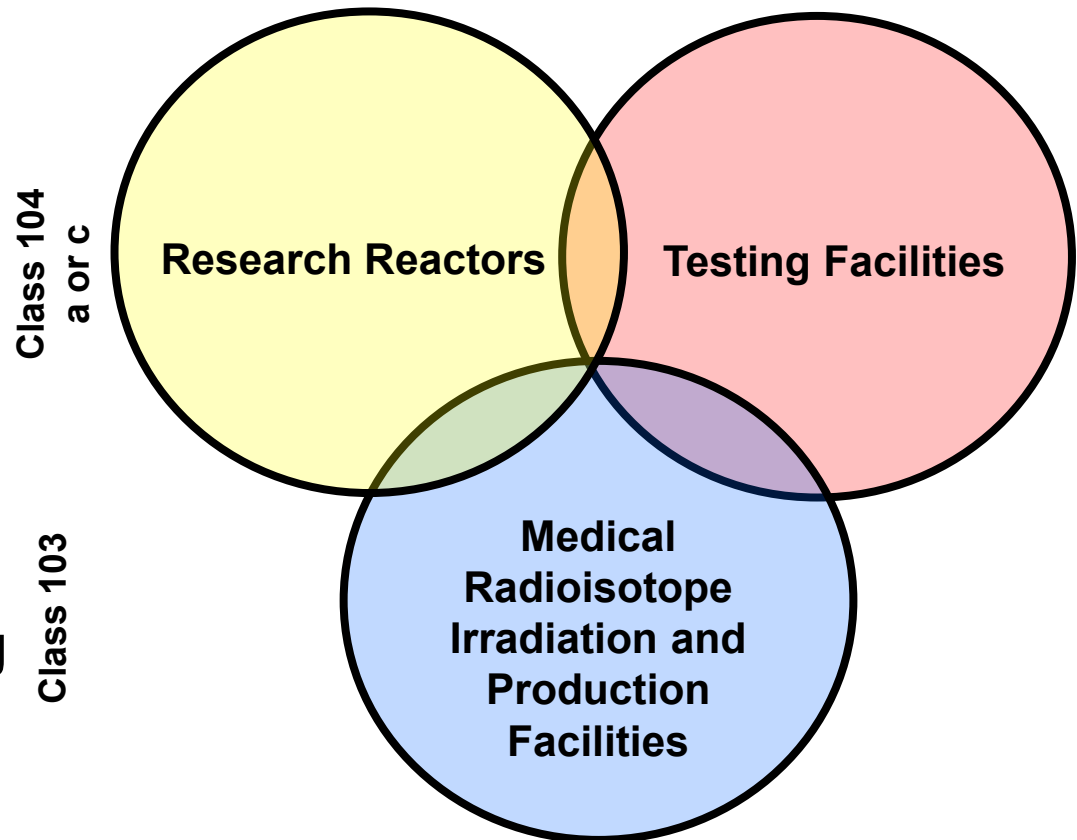
3. Define the License Renewal Process

- Consolidate license renewal requirements under 10 CFR 50.135 for testing facilities and NPUFs licensed under 10 CFR 50.22
- Clarify license renewal process
- Licenses will be effective immediately
- Maintains 40-year term for licenses
- Enhance regulatory efficiency



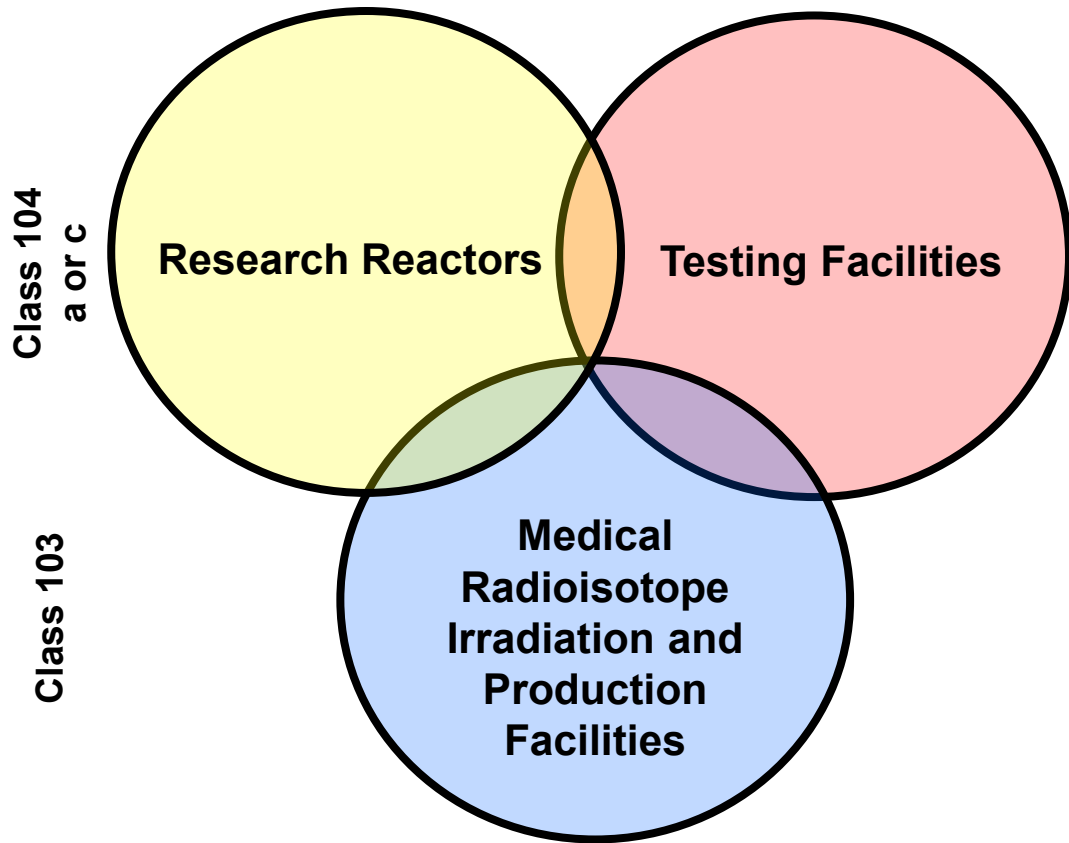
4. Require Updated FSAR Submittals

- Extend applicability of 10 CFR 50.71(e) to NPUFs
- Ensure timely documentation of changes to licensing basis
- Benefit knowledge management, NRC's inspection program, and licensee operator training and exams
- **Reg Guide 2.7 provides guidance on the FSAR updates.**



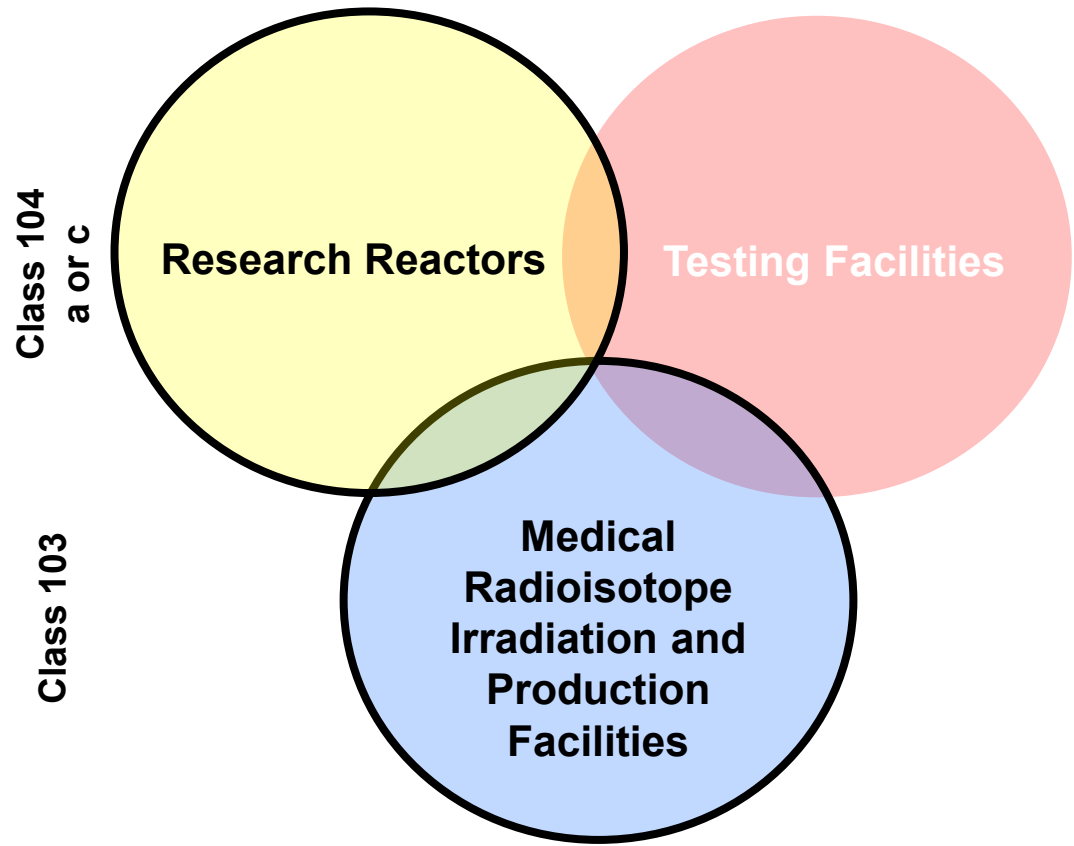
5. Amend Timely Renewal Provision

- Create two-year timely renewal for Class 103 and testing facilities and exempt Class 104a and 104c NPUFs, other than testing facilities
- 30 days in 10 CFR 2.109 is not a sufficient period of time for adequate assessment of license renewal application
- Two years provides sufficient time
- **Maintain 30-day timely renewal provision for certain facilities**



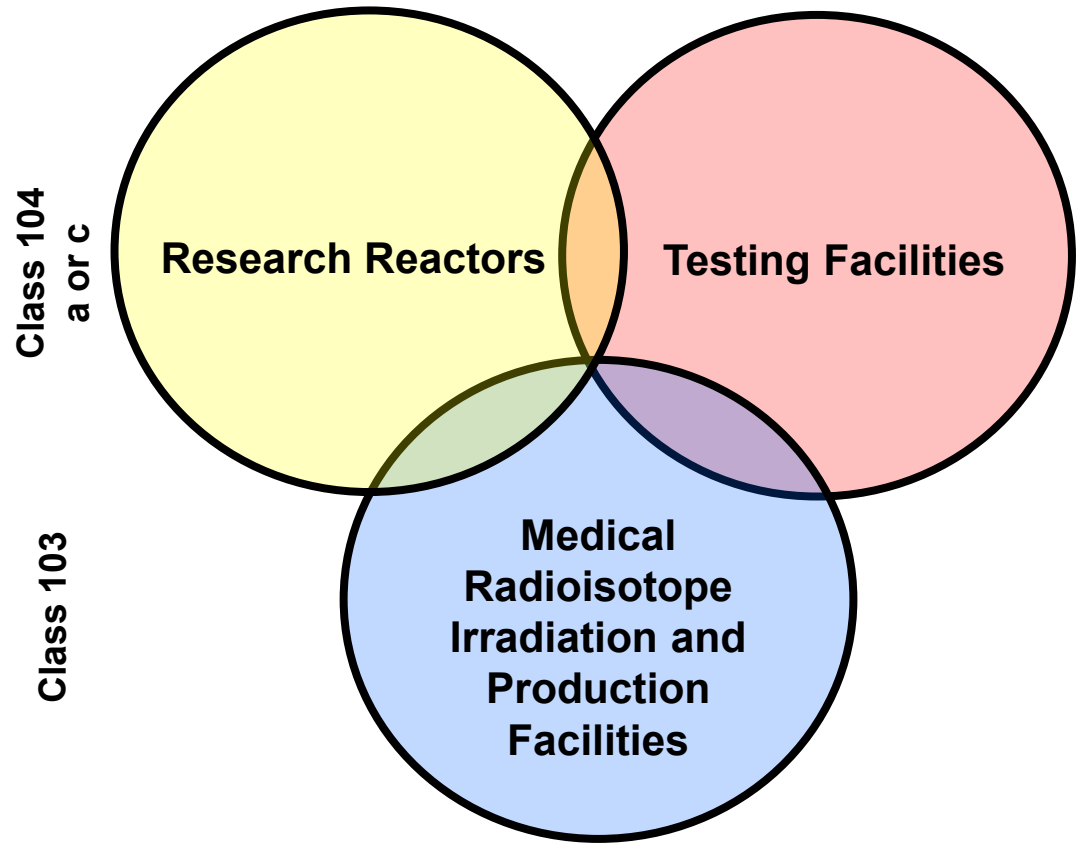
6. Provide an Accident Dose Criterion

- Create new accident dose criterion for NPUFs, other than testing facilities, in 10 CFR 50.34
- Part 20 public dose limits are unnecessarily restrictive as accident dose criteria
- Criterion would align with early phase EPA PAG and provide adequate protection from unnecessary exposure to radiation
- Revised the location within 10 CFR 50.34 of the accident dose criterion



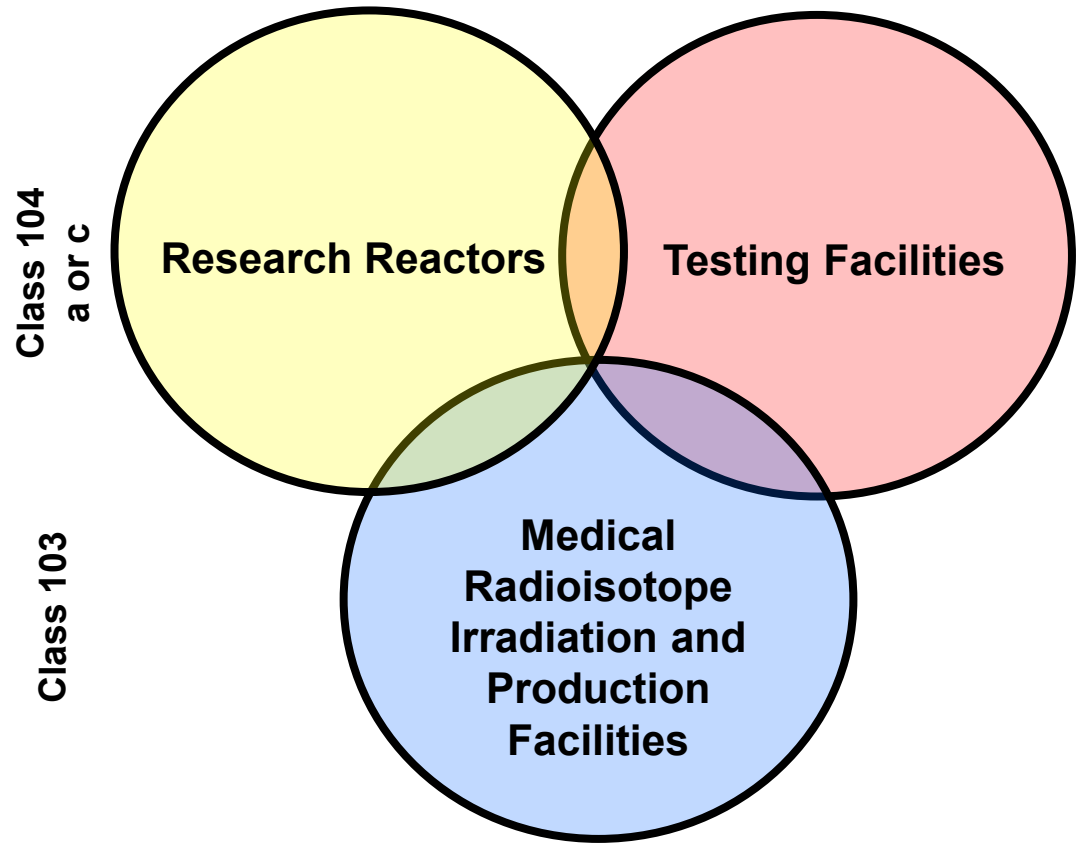
7. Extend Applicability of 10 CFR 50.59

- Extend applicability to NPUFs regardless of decommissioning status
- 10 CFR 50.59 currently is not applicable to NPUFs once fuel is moved offsite
- Avoid burden of issuing license amendments



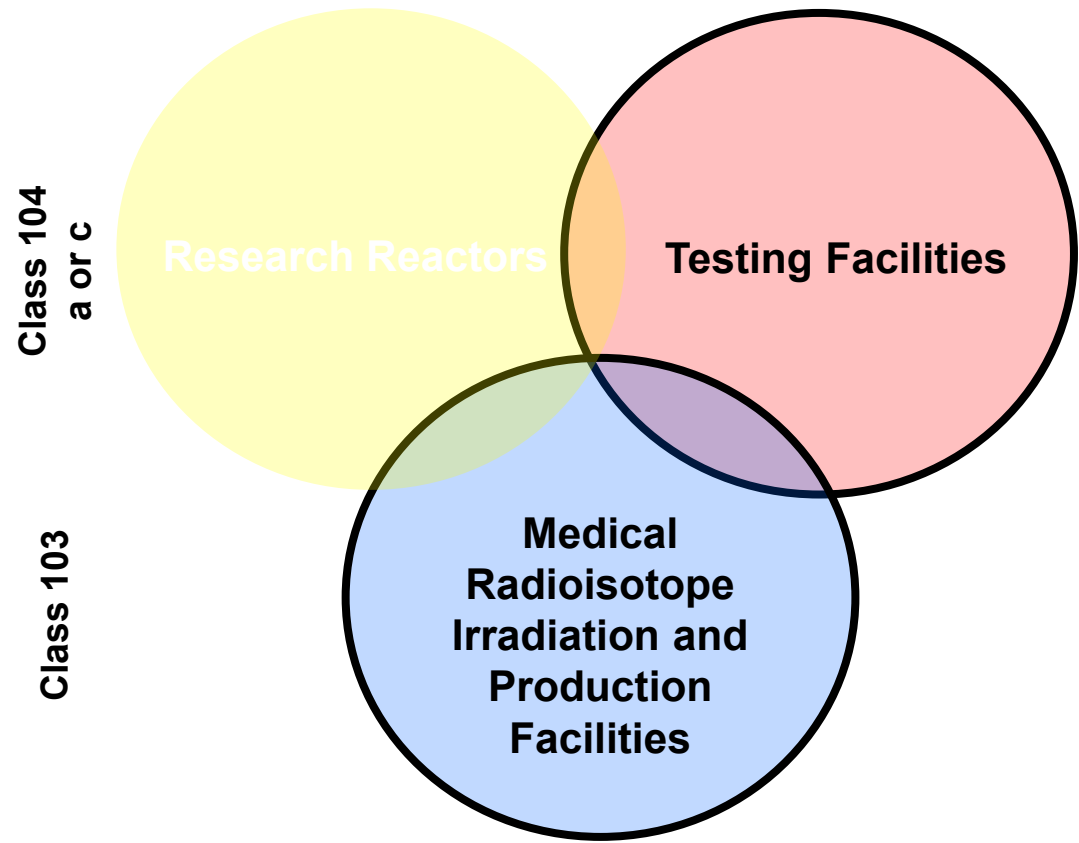
8. Clarify Existing Environmental Reporting Requirements

- Add requirement in 10 CFR 51.56 for NPUFs to provide an environmental report per 10 CFR 51.45
- Historically, NRC has relied on 10 CFR 51.41 to collect “environmental information”
- Improve consistency and clarify Part 51 requirements for licensing actions



9. Eliminate NPUF Financial Qualification Information Requirement

- Eliminate 10 CFR 50.33(f)(2) financial qualification requirement at license renewal
- Primary means to ensure safety is through NRC's oversight and enforcement programs
- Reduce licensee burden without compromise to public health and safety



Significant Changes from the NPUF Proposed Rule

- Revised the proposed definition of “non-power production or utilization facility”
- Revised the existing definitions of “non-power reactor,” “research reactor,” and “testing facility”
- Made conforming changes to terms and definitions throughout 10 CFR Chapter I
- Revised proposed 10 CFR 50.135 so that renewed licenses will be effective immediately
- Clarified proposed 10 CFR 50.135 to maintain 40-year terms for renewed licenses
- Maintained timely renewal provision for certain facilities
- Revised the location within 10 CFR 50.34 of the accident dose criterion

NPUF Final Rule Summary

| NPUF Final Rule Change | Class 103 Facilities | Class 104a Facilities | Class 104c Facilities | |
|---|-------------------------|--------------------------|--------------------------|---------|
| | Commercial | Medical Therapy | R&D | Testing |
| 1. Update terms and definitions | ✓ | ✓ | ✓ | ✓ |
| 2. Eliminate license terms | N/A | ✓ | ✓ | N/A |
| 3. Define the license renewal process | ✓ | N/A | N/A | ✓ |
| 4. Require updated FSAR submittals | ✓ | ✓ | ✓ | ✓ |
| 5. Amend timely renewal provision | ✓ | ✓ | ✓ | ✓ |
| 6. Provide an accident dose criterion | ✓* | ✓ | ✓ | N/A |
| 7. Extend applicability of 10 CFR 50.59 | ✓ | ✓ | ✓ | ✓ |
| 8. Clarify existing environmental reporting requirements | ✓ | ✓ | ✓ | ✓ |
| 9. Eliminate NPUF financial qualification information for license renewal | ✓ | N/A | N/A | ✓ |

* Not applicable for Class 103 testing facilities

NPUF Rulemaking Schedule

- Final NPUF rule milestones
 - Currently in concurrence
 - Presentation to ACRS full committee during the week of February 4, 2019
 - Public meeting on the draft final rule implementation schedule for late February
 - Due to Commission in June 2019

QUESTIONS?



BACK UP SLIDES



The policy for regulation of Class 104 NPUFs is described in the Atomic Energy Act of 1954, as amended, Section 104a. and c.

Sec. 104. Medical Therapy and Research and Development

- a. ...the Commission is directed to permit the widest amount of effective medical therapy possible with the amount of special nuclear material available for such purposes and to impose the minimum amount of regulation consistent with its obligations under this Act to promote the common defense and security and to protect the health and safety of the public.
- c. The Commission is directed to impose only such minimum amount of regulation of the licensee as the Commission finds will permit the Commission to fulfill its obligations under this Act to promote the common defense and security and to protect the health and safety of the public and will permit the conduct of widespread and diverse research and development.



The policy for regulation of Class 103 NPUFs is described in the Atomic Energy Act of 1954, as amended, Section 103.

Sec. 103. Commercial Licenses

- a. The Commission is authorized to issue licenses to persons applying therefor to transfer or receive in interstate commerce, manufacture, produce, transfer, acquire, possess, use, import, or export under the terms of an agreement for cooperation arranged pursuant to section 123, utilization or production facilities for industrial or commercial purposes. Such licenses shall be issued in accordance with the provisions of chapter 16 and subject to such conditions as the Commission may by rule or regulation establish to effectuate the purpose and provisions of this Act.

- c. Each such license shall be issued for a specified period, as determined by the Commission, depending on the type of activity to be licensed, but not exceeding forty years from the authorization to commence operations and may be renewed upon the expiration of such period.

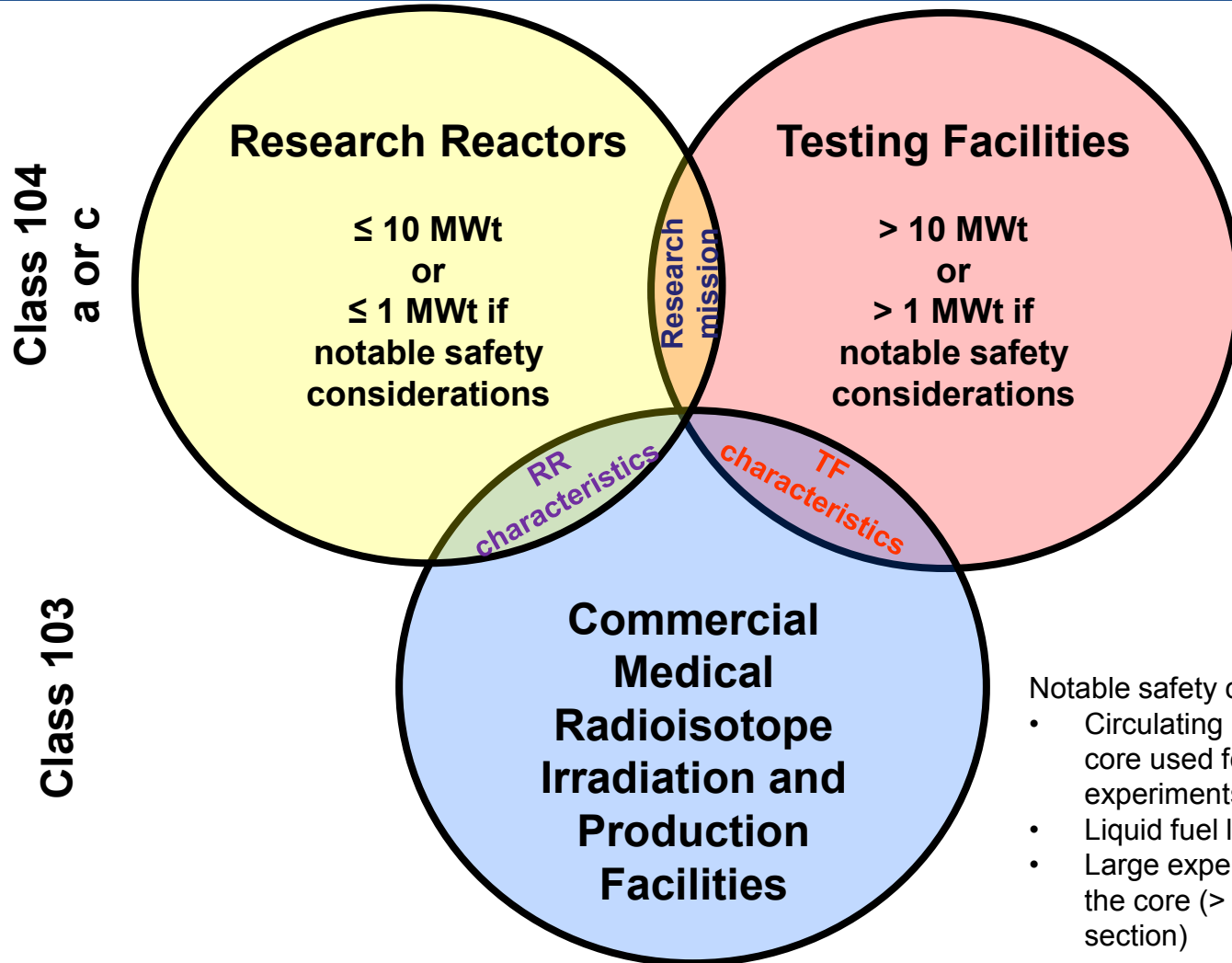
Regulatory Definitions

- Non-power reactor means a research or test reactor licensed under § 50.21(c) or 50.22 of this part for research and development [*10 CFR 50.2 Definitions*].
- Research reactor means a nuclear reactor licensed by the Commission under the authority of subsection 104c of the Act and pursuant to the provisions of § 50.21(c) of this chapter for operation at a thermal power level of 10 megawatts or less, and which is not a testing facility as defined by paragraph (m) of this section [*§ 170.3 Definitions*].



- Testing facility means a nuclear reactor which is of a type described in § 50.21(c) of this part and for which an application has been filed for a license authorizing operation at:
 - (1) A thermal power level in excess of 10 megawatts; or
 - (2) A thermal power level in excess of 1 megawatt, if the reactor is to contain:
 - (i) A circulating loop through the core in which the applicant proposes to conduct fuel experiments; or
 - (ii) A liquid fuel loading; or
 - (iii) An experimental facility in the core in excess of 16 square inches in cross-section. [§ 170.3 Definitions]

Characteristics of Current NPUF Entities



- Notable safety considerations:
- Circulating loop through the core used for fuel experiments
 - Liquid fuel loading
 - Large experimental facility in the core (> 16 in² in cross-section)