UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Gregory B. Jaczko, Chairman
Kristine L. Svinicki
George Apostolakis
William D. Magwood, IV
William C. Ostendorff

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In the Matter of   )
)
ENTERGY NUCLEAR GENERATION   )   Docket No.50-293-LR
COMPANY and ENTERGY NUCLEAR   )
OPERATIONS, INC.   )
)
(Pilgrim Nuclear Power Station)   )
_____)

CLI-10-22

<u>MEMORANDUM AND ORDER</u>

Pursuant to 10 C.F.R. § 2.313(b)(2), Pilgrim Watch, the intervenor in this license renewal

proceeding, moved for disqualification of Administrative Judge Paul B. Abramson.[1] In a recent

decision, Judge Abramson denied the motion.[2] Under our regulations, if an Atomic Safety and

Licensing Board member declines to grant a party's recusal motion, the motion is referred to the

Commission to "determine the sufficiency of the grounds alleged."[3] Accordingly, we have

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[1] *Motion on Behalf of Pilgrim Watch for Disqualification of Judge Paul B. Abramson in the Pilgrim Nuclear Power Station Relicensing Proceeding* (May 14, 2010) (Pilgrim Watch Motion).

[2] Decision (Denying Motion on Behalf of Pilgrim Watch for My Self-Disqualification from the Remand Proceedings and Referring Motion to the Commission) (June 10, 2010) (unpublished) (Decision).

[3] *See* 10 C.F.R. § 2.313(b)(2).

reviewed Pilgrim Watch's motion, Judge Abramson's decision, and the parties' related briefs.[4]

For the reasons outlined below, we agree that disqualification is not warranted.

DISCUSSION

Pilgrim Watch's motion relies upon the disqualification standard for federal court justices,

judges, and magistrates, found in 28 U.S.C. § 455. Specifically, Pilgrim Watch relies upon the

following provisions of § 455:

> (a) Any justice, judge, or magistrate judge of the United States shall disqualify himself in any proceeding in which his impartiality might reasonably be questioned.
>
> (b) He shall also disqualify himself in the following circumstances:
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>> (1) Where he has a personal bias or prejudice concerning a party, or personal knowledge of disputed evidentiary facts concerning the proceeding . . . .

Judge Abramson's decision likewise refers to the § 455 standard. By its own terms, the

disqualification standard under 28 U.S.C. § 455 is not directed to administrative judges, but the

Commission and its adjudicatory boards have applied it in assessing a motion for

disqualification under 10 C.F.R. § 2.313, and it provides a helpful framework for such an

assessment.[5] We apply the standard here, and find disqualification to be unwarranted.

Pilgrim Watch bases its motion for disqualification on two sentences spoken at a May 4,

2010, telephone conference. In requesting the resume of David Chanin, a Pilgrim Watch expert

on the MACCS2 (MELCOR Accident Consequence Code System 2) code, Judge Abramson

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[4] Our rules do not contemplate additional briefing by the parties following a referral pursuant to Section 2.313(b)(2). Nonetheless, all three parties filed additional pleadings before us. As a matter of discretion we took these filings into account in making today's decision.

[5] *See Hydro Resources, Inc.,* CLI-98-9, 47 NRC 326, 331 (1998); *Houston Lighting and Power Co.* (South Texas Project, Units 1 and 2), CLI-82-9, 15 NRC 1363, 1365-67 (1982). *See also Nuclear Info. & Res. Serv. v. NRC,* 509 F.3d 562, 571 (D.C. Cir. 2007); *Metro. Council of NAACP Branches v. FCC,* 46 F.3d 1154, 1164-65 (D.C. Cir. 1995).
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stated the following: "Let me ask you to submit [Chanin's] resume because I don't believe he wrote the code. I was involved with a lot of that personally."[6]

Pilgrim Watch's motion notes that the MACCS2 code was used to perform the Severe Accident Mitigation Alternatives (SAMA) analysis challenged in this proceeding, and that there are issues before the Board on remand that go to the adequacy of the code's straight-line Gaussian plume model as applied to the Pilgrim site.[7] Pilgrim Watch argues that Judge Abramson's brief statement "makes clear that he has personal knowledge" of the MACCS2 code, and that "he has (or at least reasonably appears likely to have) his personal views of its adequacy."[8] Pilgrim Watch therefore stresses that Judge Abramson "should disqualify himself because 'he . . . has personal knowledge of disputed evidentiary facts concerning the proceeding.'"[9] Pilgrim Watch further claims that Judge Abramson's statement that he did "not believe" that Mr. Chanin "wrote the code" would "clearly . . . cause a reasonable person to question Judge Abramson's impartiality and whether he has a personal bias or prejudice concerning Mr. Chanin, Pilgrim Watch's expert witness."[10]

In denying the recusal motion, Judge Abramson initially acknowledges that he "can understand how [Pilgrim Watch] reached the conclusion" that he was involved in developing the MACCS2 code.[11] But he then goes on to clarify that in fact he had "no personal involvement in the creation of the MACCS2 code" and has "no personal knowledge of disputed evidentiary

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[6] Transcript (May 4, 2010) at 665.

[7] *See* Pilgrim Watch Motion at 3.

[8] *Id.* at 4.

[9] *Id.* at 4 (quoting 28 U.S.C. § 455(b)(1)).

[10] *Id.*

[11] Decision at 7.

facts concerning it."[12] He explains that what he meant by the words "a lot of that" is that he

worked earlier in his career as a scientist developing "computer codes for accident analysis,"

including work modeling various phenomena and "incorporating such models into nuclear

reactor safety analysis codes."[13] Judge Abramson emphasizes that he had "*absolutely nothing

to do with the modeling or development of the MACCS2 code or any of its predecessor

versions*," and possesses "no particular knowledge of the modeling or methods of MACCS2

beyond that which would be expected of any scientist reasonably knowledgeable in this area of

nuclear science."[14] Judge Abramson additionally states that under the Atomic Energy Act, the

scientist members of the Licensing Board are expected, indeed *required*, to have "technical or

other qualifications . . . appropriate to the issues to be decided," and therefore any background

that he may have in "modeling or computer code mechanics" would be "fully consistent with the

Congressional mandate" regarding NRC adjudicatory hearings.[15]

Judge Abramson further explains that on remand the central "issues concern the ability

of the MACCS2 computer code to compute the effects of certain meteorological patterns," and

whether there is significant "error in the modeling of meteorology."[16] He then says that he never

had "any involvement whatsoever with [the] modeling of meteorology," nor any prior knowledge

of or experience with the "*entire* MACCS2 code."[17] Noting that the standard for disqualification

under 28 U.S.C. § 455 is whether the "reasonable" person who "know[s] all the circumstances,

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[12] *Id.*

[13] *Id.*

[14] *Id.* at 8-9 (emphasis in original).

[15] *Id.* at 12-13 (referencing Atomic Energy Act and its history regarding establishment of the Atomic Safety and Licensing Board Panel).

[16] *See id.* at 14.

[17] *See id.* at 9,16 (emphasis added).

would harbor doubts about the judge's impartiality,"[18] Judge Abramson concludes that there is

nothing in his professional background that might lead an "impartial observer, cognizant of all

the circumstances, to reasonably believe" that he has "prejudged the capability (or, for that

matter, any lack of such capability) of MACCS2 to predict the phenomena at issue in this

proceeding."[19]

As to his request for Mr. Chanin's resume, Judge Abramson explains that he did not

single out Pilgrim Watch or Mr. Chanin, but requested all of the parties to provide the Board with

the "full credentials on their experts."[20] He further explains that Pilgrim Watch's representative

repeatedly stated that Mr. Chanin "wrote the code," which implied to Judge Abramson that Mr.

Chanin was the "sole author" of the MACCS2 code.[21] Because this "bare implication of sole

authorship was repeated many times by [Pilgrim Watch]," Judge Abramson states that he

wanted to better understand the extent of Mr. Chanin's role in developing the code, given that

there are many stages to code development, including developing and implementing models,

organizing and supervising programming and computational methodology, and verifying and

validating computations, and Pilgrim Watch appeared to be suggesting that Mr. Chanin

"personally and by himself" performed *all* of these functions.[22] Judge Abramson states that the

information then in the record did not specify what roles Mr. Chanin had in developing the

MACCS2 code, nor specified his particular areas of expertise. Because the core issue on

remand involves meteorological modeling, Judge Abramson states that he appropriately wanted

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[18] *Id.* at 10 (quoting *Shoreham Nuclear Power Station* (Shoreham Nuclear Power Station, Unit 1), CLI-84-20, 20 NRC 1061, 1078 n.46 (1984) (citation omitted)).

[19] *Id.*

[20] *Id.* at 17-18 (quoting Tr. at 653).

[21] *Id.* at 16, 18-19.

[22] *Id.* at 18-19.

to elicit further information on Mr. Chanin's involvement and knowledge of the meteorological model in the MACCS2 code. Judge Abramson states that he has not prejudged Mr. Chanin's expertise and has no bias against him.

As Judge Abramson points out, the proper inquiry under 28 U.S.C. § 455 is made from the perspective of "a reasonable person, *knowing all the circumstances.*"[23] "That an unreasonable person, focusing on only one aspect of the story, might perceive a risk of bias is irrelevant."[24] "Section 455(a) requires a showing that would cause an objective, disinterested observer fully informed of the underlying facts [to] entertain significant doubt that justice would be done absent recusal."[25] Judge Abramson has explained on the record the context in which his comments were made, and why they did not call for his disqualification. We agree with Judge Abramson. Given his explanation of his original remarks, an impartial observer, cognizant of the record, would find no reasonable factual basis to question his impartiality or question whether he has knowledge of disputed evidentiary facts going to the adequacy of the MACCS2 code.

Pilgrim Watch suggests that Judge Abramson's prior "experience in modeling, creating and working with computer codes" to predict accident scenarios *itself* constitutes "extrajudicial knowledge of . . . disputed evidentiary facts."[26] But mere experience or background in a relevant technical field does not imply knowledge of the specific disputed facts in a case.[27]

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[23] *Sao Paolo State of the Federative Republic of Brazil v. Am. Tobacco Co., Inc.*, 535 U.S. 232-33 (2002) (emphasis in original).

[24] *In re Sherwin-Williams Co.*, 607 F.3d 474, 477 (7th Cir. 2010).

[25] *In re Aguinda*, 241 F.3d 194, 201 (2d Cir. 2001) (internal quotation omitted).

[26] *Pilgrim Watch Response to Judge Paul B. Abramson Decision On Recusal Motion* (June 16, 2010) (Pilgrim Watch Response to Decision) at 11 (emphasis in original).

[27] *See*, *e.g.*, *United States v. Bonds,* 18 F.3d 1327, 1330-31 (6th Cir. 1994); *In re Aguinda*, 241 F.3d at 204-05; *Clarkco Landfill Co. v. Clark Cty. Solid Waste Mgt. Dist.,* 20 F.Supp.2d 1185, 1191 (S.D. Ohio 1998).

Here, Judge Abramson's prior experience in accident modeling ended 26 years ago,[28] and did

not involve either the MACCS2 code or meteorological modeling of any kind. It would be purely

speculative to assume that Judge Abramson's prior experience in the field of severe accident

modeling (a field encompassing an array of topics) involved the specific modeling evidence or

facts that may be material to the disposition of this proceeding on remand. Moreover, in this –

as in every NRC adjudicatory proceeding – Licensing Board judges remain under a continuing

obligation to withdraw if a ground for disqualification arises.[29]

An additional aspect of Judge Abramson's decision warrants special comment. Going

beyond the four corners of Pilgrim Watch's recusal motion, Judge Abramson's decision refers to

"fundamental" disagreement over the scope of issues on remand.[30] Moreover, the record

reflects that there may be some confusion about the intent of our remand decision in CLI-10-11.

We therefore take this opportunity to clarify matters and perhaps simplify the proceeding on

remand.

Judge Abramson correctly notes that the MACCS2 code contains a meteorological

atmospheric dispersion module (called ATMOS) that uses a straight-line Gaussian plume

dispersion model. The ATMOS module is used to predict the transport, dispersion, and

deposition of radiologic material following a severe accident. Other modules in the MACCS2

code (called EARLY and CHRONC) use the ATMOS dispersion modeling results to calculate

expected accident consequences (*e.g.*, from radiological doses and land contamination) and

complete the SAMA cost-benefit risk analysis. Judge Abramson is correct that the issue on

remand focuses on the adequacy of the atmospheric dispersion modeling in the Pilgrim SAMA

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[28] *See* Decision at 8 n.18.

[29] *See* 10 C.F.R. § 2.313(b).

[30] *See* Decision at 2-4, 14-15.

analysis, not the methodology or underlying assumptions used for *translating* the atmospheric

dispersion modeling results into economic costs.

Judge Abramson mistakenly assumes, however, that in CLI-10-11 we directed or

otherwise *required* that "the MACCS2 [code] computations be redone by varying the

meteorological modeling" in the code.[31] In CLI-10-11, we found that material factual disputes

remained, and therefore it had been inappropriate for the Board majority to dismiss Pilgrim

Watch's dispersion modeling challenge.[32] We also stressed that the mere fact that a plume

model may not reflect all meteorological phenomena would not necessarily mean that the

Pilgrim SAMA cost-benefit conclusions are incorrect.[33]   We noted that the record contained

specific, "potentially significant considerations" going to whether Pilgrim Watch's meteorological

claims could credibly have a material effect on the SAMA cost-benefit conclusions, but that the

Board had not addressed any of these considerations.[34]

Judge Abramson's decision suggests that the remand should focus only on changing

variables in the meteorological "input and models" used in the ATMOS module.[35] He has

encouraged the parties' experts to discuss whether such an approach would be meaningful, but

it is not clear that they will agree that varying inputs would produce meaningful results.[36] This

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[31] *See id.* at 14 n.40.

[32] *See* CLI-10-11, 71 NRC __ (slip op. at 18-23) (Mar. 26, 2010).

[33] *See id. at* 21-23, 25-26.

[34] *Id.* (referencing Entergy's "WSMS Report"). We additionally noted in CLI-10-11 that it is NRC practice for SAMA analysis to utilize mean consequence values, which results in an averaging of potential consequences. *See id.* at 38-39. Because Pilgrim Watch apparently questions this practice, *see*, *e.g.*, Tr. at 637, it would be appropriate for the Board on remand to consider whether the NRC's practice is reasonable for a SAMA analysis, and whether Pilgrim Watch's concerns are timely raised.

[35] *See* Decision at 15.

[36] *See, e.g.*, Tr. at 618, 645 (opinion of Pilgrim Watch expert Dr. Bruce Egan that the sea breeze effect is three-dimensional and cannot be reflected by a straight-line plume model).

remains, therefore, a disputed question. Indeed, what Judge Abramson characterizes as a dispute over the "scope" of the remanded meteorological patterns issue appears at least partially to be a dispute over *how to assess* the remanded issue, for which there may not be one clear-cut answer.

Notably, there are practical constraints on the degree to which the meteorological modeling can be altered in the MACCS2 code, which is the most current, established code for NRC SAMA analysis. As Pilgrim Watch states, the straight-line Gaussian plume model is "embedded in the MACCS2 code."[37] Therefore, it is not possible simply to "plug in" and run a different atmospheric dispersion model in the MACCS2 code to see if the SAMA cost-benefit conclusions change. The three modules (ATMOS, EARLY, and CHRONC) in the MACCS2 code are *integral* parts of the code.

As we earlier emphasized, NEPA requirements are "tempered by a practical rule of reason."[38] An environmental impact statement is not intended to be "a research document."[39] If relevant or necessary meteorological data or modeling methodology prove to be unavailable, unreliable, inapplicable, or simply not adaptable for evaluating the SAMA analysis cost-benefit conclusions, there may be no way to assess, through mathematical or precise model-to-model comparisons, how alternate meteorological models would change the SAMA analysis results. Some assessments may necessarily be qualitative, based simply on expert opinion.

Ultimately, NEPA requires the NRC to provide a "reasonable" mitigation alternatives analysis, containing "reasonable" estimates, including, where appropriate, full disclosures of any known shortcomings in available methodology, disclosure of incomplete or unavailable

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[37] *See* Pilgrim Watch Response to Decision at 4.

[38] *See Communities, Inc. v. Busey,* 956 F.2d 619, 626 (6th Cir. 1992); CLI-10-11, 71 NRC __ (slip op. at 37). *See also, e.g., Hells Canyon Alliance v. United States Forest Serv.,* 227 F.3d 1170, 1184-85 (9th Cir. 2000).

[39] *See Town of Winthrop v. FAA*, 533 F.3d 1,13 (1st Cir. 2008).

information and significant uncertainties, and a reasoned evaluation of whether and to what extent these or other considerations credibly could or would alter the Pilgrim SAMA analysis conclusions on which SAMAs are cost-beneficial to implement.[40]

CONCLUSION

For the reasons outlined in this decision, we agree with Judge Abramson's determination that Pilgrim Watch's motion does not provide any ground warranting his disqualification.

IT IS SO ORDERED.[41]

For the Commission

[NRC Seal]   /RA/

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Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland
this 27th day of August, 2010.

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[40] *See, e.g.*, *Laguna Greenbelt, Inc. v. United States Dep't. of Transp.*, 42 F.3d 517, 528 (9th Cir. 1994); *Lands Council v. McNair*, 537 F.3d 981, 1001-02 (9th Cir. 2008); *Communities,* 956 F.2d at 626; *Or. Natural Res. Council Fund v. Goodman*, 503 F.3d 884, 897 (9th Cir. 2007); *Village of Bensonville v. FAA*, 457 F.3d 52, 71 (D.C. Cir. 2006); *N.J. Dep't. of Envtl Prot. v. NRC*, 561 F.3d 132, 144 (3d Cir. 2009); *Salmon River Concerned Citizens v. Robertson,* 32 F.3d 1346, 1358-60 (9th Cir. 1994); *Sierra Club v. United States Dep't. of Transp.,* 310 F.Supp.2d 1168, 1188 (D. Nev. 2004); *San Francisco Baykeeper v. United States Army Corps of Eng'rs,* 219 F.Supp.2d 1001, 1013-1016 (N.D. Calif. 2002).

[41] Commissioner Apostolakis did not participate in this matter.