



# **ALLEGATION PROGRAM**

## **ANNUAL TRENDS REPORT**

**Calendar Year 2019**

**U.S. Nuclear Regulatory Commission  
Office of Enforcement  
Washington, DC 20555**

## CONTENTS

EXECUTIVE SUMMARY .....	1
TRENDS IN ALLEGATIONS .....	3
National Trends .....	3
Reactor Licensee Trends .....	4
Materials Licensee Trends .....	6
Source Trends .....	7
Allegation Trends for Selected Reactor Sites.....	8
Watts Bar Units 1 and 2 .....	9
Browns Ferry Units 1, 2 and 3.....	12
Allegation Trends for Selected Materials Licensees.....	13
Allegation Trends for Selected Vendors.....	13
Trends in the Agreement States .....	14
OVERVIEW OF PROGRAM ACTIVITIES .....	16
Requests for Information Regarding Discrimination Findings.....	16
Chilling Effect Letters.....	17
Preinvestigation Alternative Dispute Resolution Process .....	17
CONCLUSIONS.....	18
APPENDIX.....	A-1

## FIGURES

Figure 1 Allegations Received by Calendar Year .....	3
Figure 2 Reactor Concerns Nationwide, 2019 .....	5
Figure 3 Allegations by Type of Materials Licensee Nationwide, 2019 .....	7
Figure 4 Allegations by Source Category Nationwide, 2018 .....	8
Figure 5 Allegations at Watts Bar Units 1 and 2 .....	9
Figure 6 Allegations at Browns Ferry Units 1, 2, and 3.....	12
Figure 7 NRC and Agreement States.....	14

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**EXECUTIVE SUMMARY**

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U.S. Nuclear Regulatory Commission (NRC) Management Directive 8.8, “Management of Allegations,” dated January 29, 2016, requires the Agency Allegation Advisor to prepare an annual report for the Executive Director for Operations that analyzes allegation trends. This annual report fulfills that commitment by providing national, regional, and site-specific trend analyses. In addition, this report discusses staff activity in calendar year 2019 involving the Allegation Program and related policies. The allegation staff continues to facilitate the agency-sponsored preinvestigation alternative dispute resolution process for discrimination allegations. The NRC believes this preinvestigation process is beneficial to the environment for raising concerns. The preinvestigation alternative dispute resolution process gives an individual and his or her employer (or former employer) the opportunity to resolve an allegation of discrimination through mediation, potentially avoiding lengthy litigation or an NRC investigation, or both. At the time the staff prepared this report, about 60 percent of the 2019 mediated discrimination concerns had been settled using this process.

During the 5-year period from 2015 through 2019, the NRC received between 200 and 600 allegations per year<sup>1</sup> concerning reactor plants, materials facilities, and vendors. Over the course of this 5-year period, the number of allegations decreased by half. Five reactor plants ceased operations during this period, and one ceased construction activities. Four of the plants that ceased operations were the subject of very few allegations before they changed their status and, therefore, had little impact on the declining trend in allegations. The fifth plant that ceased operations and the one site that ceased construction activities did receive a significant number of allegations before their change in status. However, their change in status does not explain the magnitude of the declining trend, as these sites’ contribution to the decline from 2017 through 2019 accounted for less than 25 percent of the total. The decline, therefore, might also suggest more supportive environments for raising concerns at most regulated entities.

Each allegation can include multiple concerns. Although not always the case, over the 5-year analysis period, the trend in the total number of concerns has paralleled the trend in total allegations (i.e., as the number of allegations has increased or decreased, the number of concerns has increased or decreased correspondingly). In 2019, coinciding with the overall decrease in allegations received, the total volume of allegation concerns decreased as well. More specifically, the number of allegation concerns decreased in all the regional offices, except Region I.

The chilling effect and chilled work environment concerns constituted the largest percentage of reactor allegations received nationwide. The number of concerns decreased slightly from 2018 to 2019. The most often mentioned behaviors that individuals alleged in 2019 that caused the chilling effect involved a perception that management had taken adverse action against others for raising concerns or that concerns were not addressed when employees raised them. At the time the staff prepared this report, the NRC had substantiated approximately 3 percent of chilled work environment concerns.

The second largest percentage of nationwide reactor allegations was related to discrimination concerns; however, for the second straight year, the volume of such concerns decreased by approximately 30 percent compared to the previous year. Nationwide, allegations of this type were received from licensee and contractor workers in equal numbers. The most often

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<sup>1</sup> Management Directive 8.8 defines an allegation as “a declaration, statement, or assertion of impropriety or inadequacy associated with NRC-regulated activities, the validity of which has not been established.”

mentioned retaliatory adverse action taken was termination; however, a number of complaints alleged unfavorable performance appraisals and involuntary transfers. Over the 5-year review period, 5 percent of the discrimination concerns investigated have resulted in the issuance of apparent violations. At the time the staff prepared this report, the NRC had not yet completed its investigation of any of the discrimination concerns raised in 2019.

For some in the regulated community, the NRC received allegations in numbers that warranted additional analysis.<sup>2</sup> In preparing this report, the staff reviewed a 5-year history of allegations for reactor and materials licensees and vendors to identify adverse trends. The analysis focused on allegations that originated from onsite sources to help inform the NRC's review of the environment for raising concerns. Because a large volume of allegations from onsite sources might indicate a chilled work environment, the staff selected the following two operating reactor sites for more indepth review:

- Watts Bar Nuclear Plant, Units 1 and 2
- Browns Ferry Nuclear Plant, Units 1, 2, and 3

This report discusses allegation trends at these sites. In summary, a review of the number and nature of the allegations associated with the Watts Bar site in 2019 indicates that the licensee has been able to improve the safety conscious work environment in the departments the NRC had previously concluded were chilled. With regard to the Browns Ferry site, although allegations increased, many were related to the reorganization of the licensee's employee concerns program. Nonetheless, the NRC staff will continue to evaluate multiple enforcement-related actions associated with this licensee and the potential interrelationship of these issues before resuming normal oversight activities.

Finally, in 2019, the NRC reviewed the effectiveness of 10 Agreement State responses to concerns and concluded that the Agreement States continue to address concerns promptly, thoroughly document their investigations and closeout actions, protect the concerned individuals' identities, and inform the concerned individuals of the outcomes. In general, the results of the 2019 Integrated Materials Performance Evaluation Program reviews demonstrate that the Agreement States continue to treat responses to concerns from external sources as a high priority in protecting public health and safety.

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<sup>2</sup> The total number of allegations received concerning reactor and fuel-facility licensees from all sources, as well as other information on the Allegation Program, appears on the NRC's public Web site at <http://www.nrc.gov/about-nrc/regulatory/allegations/statistics.html>.

## TRENDS IN ALLEGATIONS

The U.S. Nuclear Regulatory Commission (NRC) monitors allegations to discern trends or marked increases that might prompt the agency to question a licensee about the causes of such changes. In preparing this report, the staff reviewed a 5-year history of allegations received for reactor and materials licensees and vendors. The staff focused on allegations with the potential to offer insights into the environment for raising concerns (i.e., safety conscious work environment (SCWE)) at a given facility. Such allegations include those that current or former licensee employees, contractor employees, or anonymous sources submitted that may indicate a hesitance to raise safety concerns internally. For power reactor facilities, the staff analyzes recent allegation activity in support of the Reactor Oversight Process end-of-cycle assessments. In addition, the staff might analyze a particular site or licensee whenever allegations or inspection findings indicate that such an analysis is warranted.

The staff also reviews national trends for reactor and materials allegations, shifts in users of the NRC's Allegation Program, and the effect that the implementation of the program has on the workload in the NRC regional and program offices. The following section discusses these trends.

### National Trends

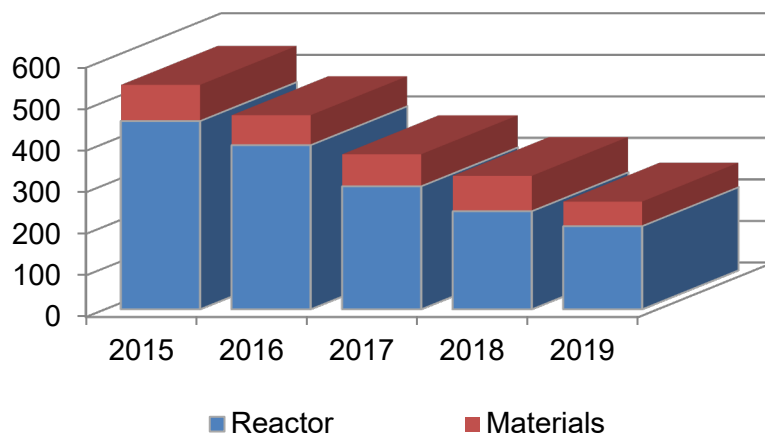
National trends inform the staff about the effect of external factors, plant events, and industry efforts to improve the SCWE at NRC-licensed facilities. The staff can use national trends to help develop budget and planning assumptions to support future agency and Allegation Program needs.

Figure 1 shows that the NRC received between 200 and 600 allegations each year and that the total number of allegations received has tended to decline from calendar years 2015 through 2019. The total number of allegations in 2019 declined by 19 percent from the previous year.

Most of that decline was

driven by a 30-percent reduction in allegations associated with materials licensees, while reactor licensee allegations saw only a 15-percent decline. Over the course of this 5-year period, the number of allegations decreased by approximately half. Five reactor plants ceased operations during this period, and one ceased construction activities. Four of the plants that ceased operations were the subject of very few allegations before they changed their status and, therefore, had little impact on the declining trend in allegations. The fifth plant that ceased operations and the one site that ceased construction activities did receive a significant number of allegations before their change in status. However, their change in status does not explain the magnitude of the declining trend, as these sites' contribution to the decline from 2017 through 2019 accounted for less than 25 percent of the total. The NRC recognizes that when

**Figure 1 Allegations Received by Calendar Year**



one plant ceases operations, its shutdown could also have an impact on the environment for raising concerns at other plants within the licensee's fleet. An analysis of allegation activity at operating plants related to those that shut down, however, does not show a decline. Rather, the rate of allegations at plants within the shutdown plant's fleet either remained steady or increased slightly in the subsequent years. Regarding the plants under construction, however, after one site shutdown construction activities, the other site's allegations dropped significantly. The NRC found in that case, that corrective actions taken by the licensee, including restructuring of the Employee Concerns Program that resulted in more concerns being raised internally using that program, was the cause of the decline in allegations. Another possible reason for the declining use of the NRC's Allegation Program could relate to its perceived viability. One way the agency assesses the continued viability of the Allegation Program is by reviewing trends in "responses after closure" (RACs). A RAC is alleege feedback on the closure of his or her allegation that indicates the NRC's response was insufficient, inaccurate, or otherwise unacceptable. The percentage of allegations during the 5-year analysis period that were the subject of a RAC remained steady and low. Therefore, the decline in allegations might suggest more supportive environments for raising concerns at most regulated entities, and NRC inspection observations concerning the environments for raising concerns at most sites support this hypothesis.

Because each allegation can include multiple concerns, the staff effort to prepare an appropriate response is based on the number of concerns received. Typically, each allegation represents two to three concerns. During the 5-year analysis period, the trend in the total number of concerns has paralleled the trend in total allegations (i.e., as the number of allegations has increased or decreased, the number of concerns has increased or decreased correspondingly). In 2019, coinciding with the overall decrease in allegations received, the total volume of allegation concerns decreased as well. More specifically, the number of allegation concerns decreased in all the regional and headquarters offices, except Region I and the Office of Nuclear Reactor Regulation.

### Reactor Licensee Trends

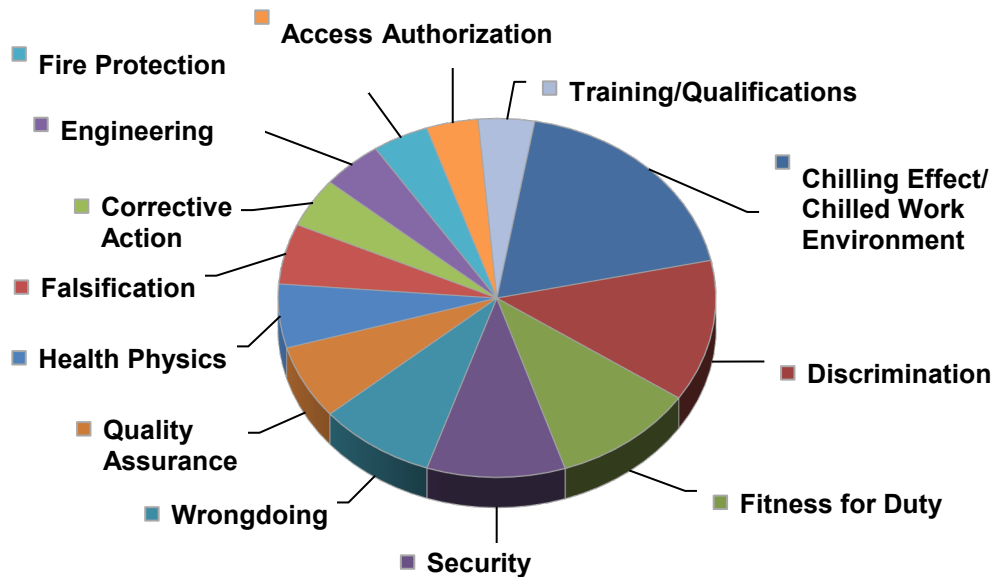
Figure 2 offers insight into areas in which the NRC is allocating resources for the evaluation of reactor-related allegations. The figure shows the 13 functional areas that represent approximately 80 percent of the allegation issues that the program received nationwide in 2019.<sup>3</sup>

Figure 2 shows that the chilling effect and chilled work environment concerns constituted the largest percentage of reactor allegations received nationwide. The number of concerns dropped slightly from 2018 to 2019. The NRC uses the term "chilling effect" to describe a condition that occurs when an event, interaction, decision, or policy change results in a perception that the raising of safety concerns to the employer or the NRC is being suppressed or is discouraged. A chilled work environment is a condition in which the chilling effect is not isolated (e.g., multiple individuals, functional groups, shift crews, or levels of workers within the organization are affected). A chilled work environment is often referred to as a condition that is the opposite of a SCWE. An equal number of all concerns of this nature were received from licensee and contractor employees. Approximately 15 percent, 5 percent fewer than last year, were received

<sup>3</sup> The agency received few allegations about concerns in areas not shown in Figure 2, which represent the remaining 20 percent of the issues received. These areas include chemistry, civil and structural, construction, criticality safety, cybersecurity, electrical, emergency preparedness, employee concerns programs, environmental, environmental qualifications, fatigue and overtime, instrumentation and control, licensing, maintenance, operations, procurement, safeguards, and safety culture.

anonymously. More than two-thirds of the concerns were received in the second and third quarters of 2019, as in the previous year. Quality assurance and maintenance departments generated more concerns about the environment for raising concerns than other reactor organizations. However, an equal number of concerns alleged the entire reactor site was hesitant to raise safety concerns. Most of the allegations about a chilled work environment were raised about the Tennessee Valley Authority (TVA) reactor sites and the corporate headquarters located in Region II. Another cluster of concerns involved the construction sites for Vogtle Electric Generating Plant, Units 3 and 4, also in Region II. The most often mentioned behaviors individuals alleged that caused the chilling effect involved a perception that management had taken adverse action against others for raising concerns or that concerns were not addressed when employees raised them. At the time the staff prepared this report, the NRC had substantiated approximately 3 percent of chilled work environment concerns.

**Figure 2 Reactor Concerns Nationwide, 2019**



Discrimination concerns constituted the next highest percentage of allegations received nationwide; however, for the second straight year, the volume of such concerns decreased by approximately 30 percent compared to the previous year. As with the chilled work environment concerns, many of the discrimination complaints were received from workers at TVA reactor sites or the corporate headquarters. Nationwide, allegations of this type were received from licensee and contractor workers in equal numbers. The most often mentioned retaliatory adverse action taken was termination; however, a number of complaints alleged unfavorable performance appraisals and involuntary transfers. Complainants primarily perceived adverse actions to have been taken for raising concerns, and a trend in concerns about inadequate procedures was evident. Over the 5-year review period, 5 percent of the discrimination concerns investigated resulted in the issuance of apparent violations. At the time the staff prepared this report, the NRC had not substantiated any of the discrimination concerns raised in 2019;

however, approximately 60 percent of those warranting investigation were still open and were either being investigated or were in the NRC's preinvestigation alternative dispute resolution (ADR) process. The NRC settled about 60 percent of the 2019 ADR-mediated discrimination concerns, a success rate similar to that of previous years. Approximately 19 percent of alleged filers filing a discrimination concern who were offered either ADR or an investigation withdrew their complaint before the agency reached a conclusion.

Concerns related to fitness for duty at reactor sites increased about 25 percent in 2019. These concerns involved multiple sites. The largest percentage of concerns, 17 percent, related to procedural noncompliance. The NRC received about 74 percent of these concerns from onsite sources.

The number of security-related concerns received in 2019 did not change compared to the previous year. Similar to fitness-for duty concerns, the largest percentage of security concerns, 23 percent, was related to procedural noncompliance.

In 2019, licensee management brought about half of the wrongdoing-related concerns to the NRC's attention. As discussed later in this report, a licensee representative, acting in his or her official capacity, will sometimes report to the NRC potential wrongdoing he or she is evaluating. The agency staff assigns an allegation process tracking number to track the evaluation progress related to the alleged wrongdoing issue. These concerns involved multiple reactor sites, and the largest percentage of wrongdoing concerns was related to persons willfully failing to follow procedures. It is noted that concerns related to procedures adherence, therefore, played a role in many discrimination, fitness for duty, security, and wrongdoing concerns.

### Materials Licensee Trends

A comparison of the types of materials issues in received allegations does not produce meaningful results because there are many different types of materials licensees with great variation in the activities they perform. To offer insights into areas in which the NRC focused its attention on materials-related allegations, Figure 3 presents the eight types of materials licensees that accounted for about 80 percent of allegation concerns that the NRC received nationwide.<sup>4</sup>

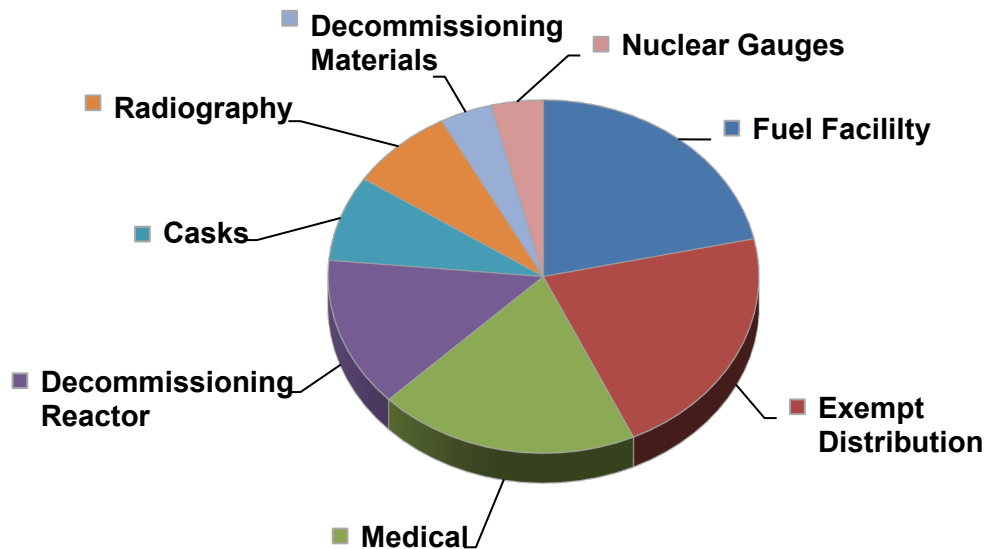
The NRC received about 30-percent fewer materials-related allegations in 2019 than in 2018; twice the percentage decline of that for reactor allegations. For several years, the number of allegations related to fuel cycle facilities has constituted the highest percentage of materials-related allegations. Therefore, overall fluctuations in the receipt rate of materials-related allegations are primarily related to changes involving one or more fuel cycle facilities.

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<sup>4</sup> The agency received few concerns about the materials licensee types not shown in Figure 3, which represent the remaining 20 percent of the issues received. These licensee types include irradiators, transportation, uranium recovery, veterinary, and waste disposal.



**Figure 3 Allegations by Type of Materials Licensee Nationwide, 2019**

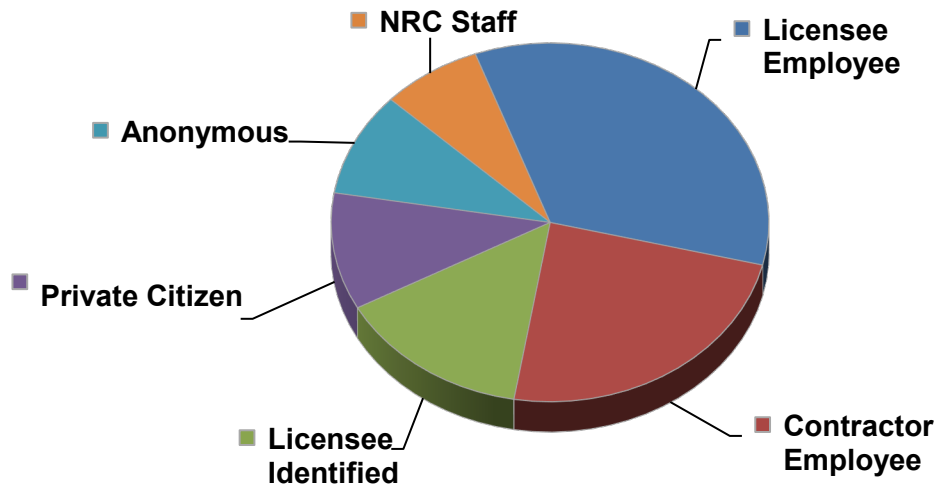


Although not the only materials licensees in 2019 subject to fewer allegations, the number of allegations concerning fuel facilities decreased by approximately 60 percent. However, increased numbers were seen in decommissioning reactors, decommissioning materials facilities, and the exempt distribution licensees. Exempt distribution products include silicon chips, gunsights, and smoke detectors distributed by persons who have a specific license from the Commission authorizing such distribution to persons exempt from the requirements for an NRC license.

#### Source Trends

Figure 4 shows a breakdown of all of the sources for reactors and materials allegations received in 2019. The data indicate that the distribution of source categories deviated from previous years. While employees of licensees (or former employees) and contractors (or former contractors) continued to be the primary sources of allegations, persons wishing to remain anonymous dropped significantly as a source of allegations in 2019. The number of allegations from licensee employees also declined and those from contractors remained steady. In considering those allegation sources with the potential to offer insights into the SCWE at a given facility (i.e., allegations that current or former licensee, contractor employees, or anonymous sources submitted), the percentage of allegations from these sources declined by about 8 percent in 2019. While the number of concerns from most sources decreased, reflecting the overall decrease in allegations received, the NRC Allegation Program received about 60 percent more allegations from private citizens in 2019 than in the previous year. Trends in this category included concerns about the sale of radioactive material on the Internet, medical administrative issues, siren testing, and security.

**Figure 4 Allegations by Source Category Nationwide, 2019**



Two of the source categories in Figure 4 deserve some explanation. The source category “NRC Staff” indicates an NRC staff member who suspects that a regulatory requirement has been violated deliberately or because of careless disregard, thus prompting the NRC Office of Investigations to investigate. The volume of NRC staff concerns remained steady compared to the previous year. The source category “Licensee Identified” indicates that a licensee representative, acting in his or her official capacity, has reported potential wrongdoing to the NRC. The agency staff assigns an allegation process tracking number to track the evaluation progress related to the alleged wrongdoing issue. Licensee-identified wrongdoing concerns was the second category to increase in 2019.

### **Allegation Trends for Selected Reactor Sites**

Trending the number and nature of allegations for specific reactor sites, individually and in the aggregate, is one method the NRC staff uses to monitor the SCWE at reactor sites. The appendix to this report offers statistics on allegations for all operating and nonoperating reactor sites. The NRC received the listed allegations during the 5-year period from January 2015 through December 2019. The list includes only allegations from onsite sources (i.e., those that might indicate the health of the SCWE). Onsite sources include current or former licensee employees, current or former contractor employees, and anonymous alлегers. For the purpose of this analysis, the NRC assumed that anonymous allegations were from onsite personnel.

Because a large volume of allegations from onsite sources might indicate a SCWE at risk, the staff conducted a more indepth SCWE review of certain sites with larger numbers of onsite allegations. Because sites with a larger population of employees and contractors (such as three-unit reactor sites) typically generate more allegations, the data must be normalized to ensure that the NRC does not disproportionately choose larger sites for further analysis. The NRC used the following algorithm, which is based on the median number of allegations received at operating reactor sites over the calendar year, considers the varying workforce size at different sites, and then determines what sites warrant additional review:

- one-unit reactor sites (or any site with fewer than 800 persons) with an onsite allegation volume greater than 2.25 times the median
- two-unit reactor sites (or any site with 800 to 1,000 persons) with an onsite allegation volume greater than 3 times the median
- three-unit reactor sites (or any site with more than 1,000 persons) with an onsite allegation volume greater than 4.5 times the median

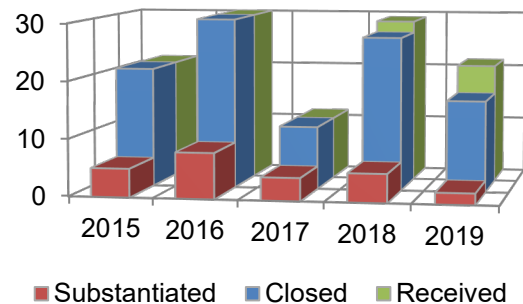
The staff recognizes, and takes into consideration when applying the above criteria, that during times of significant site activity, the site population might increase substantially.

For 2019, the median number of allegations per operating reactor site was two. However, comparing the number of allegations received at each site to such a low median would not identify meaningful anomalies. Therefore, in accordance with program guidance, the staff used a median of three in the above algorithm and identified the following reactor sites for additional review: Watts Bar Nuclear Plant, Units 1 and 2 (21 allegations); and Browns Ferry, Units 1, 2, and 3 (19 allegations). The following sections discuss the staff's analyses of the SCWE at these reactor sites.

### Watts Bar Units 1 and 2

As Figure 5 shows, the number of allegations the NRC received from onsite sources about Watts Bar Units 1 and 2 in 2019 decreased after significantly increasing in 2018. There were, however, a similar number of concerns raised. The rate of receipt was high in the first two quarters of the year, corresponding to the licensee's decision to restructure its Employee Concerns Program (ECP), including replacing the ECP personnel at each site in the fleet and the program manager at TVA headquarters. Allegations were received equally from licensee employees and contractors, with many of the concerns in the chilling effect and discrimination areas, and a number of those involving the nuclear oversight organization. The trend in discrimination concerns mirrored those of other concerns in that the number of discrimination concerns decreased in 2019 after increasing the previous year. The NRC received eight discrimination concerns in 2019, seven of which involved corporate headquarters personnel and, therefore, were attributed to multiple sites, including Watts Bar. An allegor withdrew one discrimination concern before the start of an investigation, five concerns were open at the time the staff prepared this report and were either being investigated or were in the NRC's preinvestigation ADR process, and one was resolved using that process. The remaining discrimination concern was not detailed enough to warrant further investigation. The NRC has not substantiated any discrimination concerns in the past 5 years concerning the Watts Bar site specifically, although some claims have been successfully mediated and settled using the NRC's preinvestigation ADR process. In response to two discrimination concerns raised in 2018 involving corporate personnel, however, the NRC has recently determined that those cases involved adverse actions taken in apparent violation of the NRC's employee protection regulations, and that the

**Figure 5 Allegations at Watts Bar Units 1 and 2**



apparent violations were willful. At the time the staff prepared this report, the NRC had not made a final determination in these matters, and enforcement was ongoing. Two confirmatory orders (COs) codifying actions required by TVA to improve and sustain a SCWE across the fleet are also in place, resulting from earlier apparent violations of employee protection regulations and a subsequent inspection finding that the CO requirements were not being met.

The NRC received 19 allegations asserting a chilled work environment or chilling effect in 2019, representing an increase to the 14 received in 2018. All but one was received in the first two quarters of the year, and most involved either the entire site or the corporate nuclear oversight organization. Many were of sufficient detail to warrant further review and were inspected, but none were substantiated.

The NRC issued a Chilling Effect Letter (CEL) on March 23, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16083A479), which, in reference to the operations department, stated that “information from the corrective action program, the ECP, and other sources, have provided opportunities for management to identify changes in certain aspects of the safety culture and SCWE, but the information has not been fully acknowledged and acted upon.” Although the NRC has since acknowledged improvements in the operations department and actions taken to enhance sitewide monitoring of safety culture, a second chilled work environment in the site’s radiation protection department was identified in 2018; an indication that TVA’s efforts to adequately monitor, acknowledge, and act upon department-specific changes in the SCWE continued to need improvement. Over the past year, the staff has conducted additional inspections, all of which have generally indicated TVA progress in addressing the concerns raised in the CEL and requirements of the COs. Closure of the CEL is contingent upon the NRC determining that Watts Bar has made reasonable and sustainable progress toward addressing the underlying issues that led to the issuance of the CEL.

The NRC first identified a Reactor Oversight Process SCWE theme at Watts Bar in the 2016 midcycle letter dated August 31, 2016 (ADAMS Accession No. ML16244A703), based on the issuance of the March 2016 CEL during that assessment period. After a June 2018 CEL followup inspection (ADAMS Accession No. ML18229A153), the NRC issued a follow up to the annual assessment letter (ADAMS Accession No. ML18242A458), explaining that the CEL would remain open and announcing a cross-cutting issue (CCI) in the SCWE area for Watts Bar because the NRC has documented consecutive occurrences of this cross-cutting theme. The CCI theme will be closed when the NRC has confidence in the licensee’s scope of efforts or progress in addressing the CCI.

In January 2019, the staff conducted a problem identification and resolution (PI&R) and CO followup inspection at the Watts Bar site (ADAMS Accession No. ML19072A067). The inspection team found the SCWE in the radiation protection organization improving and past improvements in the operations department had been sustained. However, the team determined that the SCWE was still fragile as the corrective actions had not been in place very long. The team inspected a number of CO items and identified one finding with regard to the requirement that TVA provide SCWE training to new supervisors within 3 months of their promotion.

In September 2019, the NRC sent TVA a request for information about an Occupational Safety and Health Administration (OSHA) finding of merit about a discrimination complaint in TVA’s nuclear oversight organization (ADAMS Accession No. ML19267A144). The licensee responded in November, stating it had initiated a discretionary SCWE mitigation plan in accordance with its

procedures and had discussed the NRC's letter and TVA's position on the OSHA finding with its impacted staff to address any concerns associated with the environment for raising concerns.

In December 2019, the staff completed an inspection of Watts Bar CO and CEL followup activities (ADAMS Accession No. ML19357A240). Based on the results of interviews, licensee safety culture surveys, and assessments, the inspection team determined that there is evidence of continued improvement in the SCWE in the radiation protection department and sustained improvement in the operations department. The team determined that Watts Bar has implemented a range of corrective actions to improve the site's ability to detect declining trends in safety culture and SCWE. For example, Watts Bar developed the Employee Issue Tracking Matrix to detect general work environment issues at a low threshold and implemented changes to the Nuclear Safety Culture Monitoring Panel process to improve tracking of safety culture and SCWE at the department level. All individuals the inspection team interviewed expressed that they were willing to raise nuclear safety concerns, but a small percentage of individuals would feel hesitant to raise concerns due to fear of retaliation. That percentage of individuals was well under the threshold for a chilled work environment, and most indicated that their hesitance was primarily based on past behaviors at the site during the time that the CEL was issued, not necessarily on current behaviors. In particular, the team observed that the operations department continued to experience challenges with trust in leadership, likely stemming from events that led to the previous chilled work environment in 2015 and 2016.

Concerning the events of 2015, the NRC initially became aware in late November of possible procedural violations and a pressurizer water level excursion during the startup of Watts Bar Unit 1 on November 11, 2015. In December 2015, the NRC began an initial review consisting of inspections and interviews of TVA employees involved in the November 11 event. The review later expanded to include interactions with TVA's Office of the Inspector General and other entities. The NRC initiated a formal investigation in August 2016 to determine whether TVA employees deliberately submitted incomplete and inaccurate information to the NRC and whether TVA employees deliberately violated plant procedures. The results of the investigation completed on May 17, 2019, identified 12 apparent violations that are being considered for escalated enforcement action (ADAMS Accession No. ML20065M374).

As previously noted, TVA reorganized its ECP in 2019, resulting in the replacement of the ECP personnel. For a few months, an interim staff was put in place, until the last quarter when the new organization launched with new ECP personnel. Watts Bar's ECP received 17 concerns for evaluation in 2019. The total number of contacts to the ECP was much greater; however, it was still fewer than contacts made in 2018. These continue to be low compared to other sites and to the number of allegations received by the NRC. It is too early to determine whether the new ECP program will benefit TVA's SCWE.

A review of the July 2019 nuclear safety culture (NSC) assessments completed for Watts Bar and TVA corporate headquarters shows that worker perceptions of TVA corporate's NSC have declined, while those of Watts Bar have improved. The assessment notes that written comments received reflect not that workers hesitate to raise concerns because they fear retaliation, but, rather, they hesitate because they do not see what, if any, actions are taken to address their concerns once raised.

In summary, a review of the number and nature of the allegations associated with the Watts Bar site in 2019 indicates that Watts Bar has been able to improve the SCWE in the operations and radiation protection departments. Furthermore, the licensee's NSC assessments indicate improvement in the overall culture. However, the NRC staff continues to evaluate the multiple

actions associated with TVA. These actions include the recent apparent violations involving the completeness and accuracy of information provided to the NRC in response to the late 2015 event that resulted in the 2016 CEL, two separate discrimination issues, and ongoing evaluation of potential closure of a CEL and a CCI. The staff is cognizant of the potential interrelationship of these issues and continues to assess and respond to each with a broad and integrated view to ensure the continued safe operation of the Watts Bar nuclear plants.

### Browns Ferry Units 1, 2, and 3

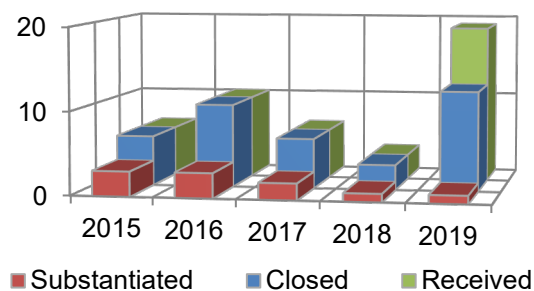
As Figure 6 shows, the number of allegations the NRC received about the Browns Ferry site from onsite sources in 2019 increased significantly after a 2-year decline. The rate of receipt spiked in the second quarter of the year, corresponding to the licensee's decision to restructure its ECP, including replacing the ECP personnel at each site in the fleet and the program manager at TVA headquarters.

Allegations were received primarily from licensee employees, but approximately 30 percent were received anonymously, most of those in the third quarter. As at Watts Bar, many of the concerns were related to a chilling effect and discrimination, but, at Browns Ferry, they involved multiple departments. The

trend in discrimination concerns mirrored those of other concerns in that the number of discrimination concerns increased in 2019 after decreasing the previous year. The NRC received seven discrimination concerns in 2019 and none in 2018. As discussed earlier, these involved both corporate headquarters and site personnel and, therefore, were attributed to multiple sites, including Browns Ferry. Five discrimination concerns were open at the time the staff prepared this report and were either being investigated or were in the NRC's preinvestigation ADR process, and one was resolved using that process. The remaining discrimination concern was not detailed enough to warrant further investigation. The NRC has not substantiated any discrimination concerns in the past 5 years for the Browns Ferry site specifically. Again, in response to two discrimination concerns raised in 2018 involving corporate personnel, the NRC has determined that those cases involved adverse actions taken in apparent violation of the NRC's employee protection regulations, and that the apparent violations were willful. At the time the staff prepared this report, the NRC had not made a final determination in these matters, and enforcement was ongoing. Two COs codifying actions required of TVA to improve and sustain an SCWE across the fleet are also in place as a result of earlier apparent violations of employee protection regulations and a subsequent inspection finding that TVA was not meeting the CO requirements.

In 2019, the NRC received 15 allegation concerns—11 of them in the second quarter—asserting a chilled work environment or chilling effect in various departments at the Browns Ferry site or TVA corporate headquarters. However, the NRC did not substantiate any of the concerns. In August 2018, the staff conducted a PI&R inspection at the Browns Ferry site (ADAMS Accession No. ML18276A012). The inspectors interviewed 30 people from a cross-section of plant organizations and concluded that, generally, workers felt free to raise safety concerns. TVA had earlier completed an internal investigation of the SCWE in the radiation protection organization and had identified a chilled work environment, including actions to take to address

**Figure 6 Allegations at Browns Ferry Units 1, 2, and 3**



the situation.

In December 2019, the staff completed an inspection of Browns Ferry's CO followup activities (ADAMS Accession No. ML20017A088). As at Watts Bar, the NRC found the licensee had violated the CO requirement to train new supervisors within 3 months of their promotion.

As previously noted, TVA reorganized its ECP in 2019. TVA removed ECP personnel from their positions, and for a few months put interim staff in place. In the last quarter of 2019, the new organization launched, with new ECP personnel. Browns Ferry's ECP received only one concern for evaluation in all of 2019—an extremely low number compared to other sites and the number of allegations the NRC received. It is too early to determine whether the new ECP program will benefit TVA's SCWE.

A review of the October 2019 NSC assessments completed for Browns Ferry shows that worker perceptions of the NSC declined when compared to the last assessment conducted in 2018. The operations department, in particular, rated almost all the safety culture traits lower than other departments participating.

In summary, although Browns Ferry's allegations significantly increased in 2019, as at Watts Bar, many were associated with the change in the ECP program. Furthermore, TVA's ECP activity and NSC assessment conclusions show a site that continues to grapple with trust issues. Although the ratings for the Environment for Raising Concerns trait are not particularly low, they declined in 2019 since the previous assessment in 2018. TVA's response to these NSC assessments will indicate to the NRC the licensee's ability to monitor, acknowledge, and act upon department-specific changes in SCWE.

The NRC continues to monitor closely the environment for raising concerns at this and other TVA sites, in particular with regard to the potential interrelationship of the multiple issues associated with TVA as discussed in the above discussion of the Watts Bar site.

### **Allegation Trends for Selected Materials Licensees**

The NRC posts allegation statistics for certain fuel cycle facilities on its public Web site (see the appendix to this report). Because of the small number of allegations and the smaller workforce sizes associated with most materials licensees, a licensee or contractor has a higher chance of identifying an allegor. Therefore, this report does not include statistics on allegations about materials licensees, other than fuel cycle facilities, nor are such statistics available to the general public. None of the fuel cycle facilities received a sufficient number of allegations to discern a trend or pattern to provide insights into the SCWE. Therefore, this report does not include more indepth reviews of specific fuel cycle facilities.

### **Allegation Trends for Selected Vendors**

Neither this report nor the NRC Web site offers statistics by contractor or vendor for reasons similar to those outlined above for selected materials licensees. None of the vendors received a sufficient number of allegations to discern a trend or pattern or to provide insights into the SCWE. Therefore, this report does not include more indepth reviews of specific vendors.

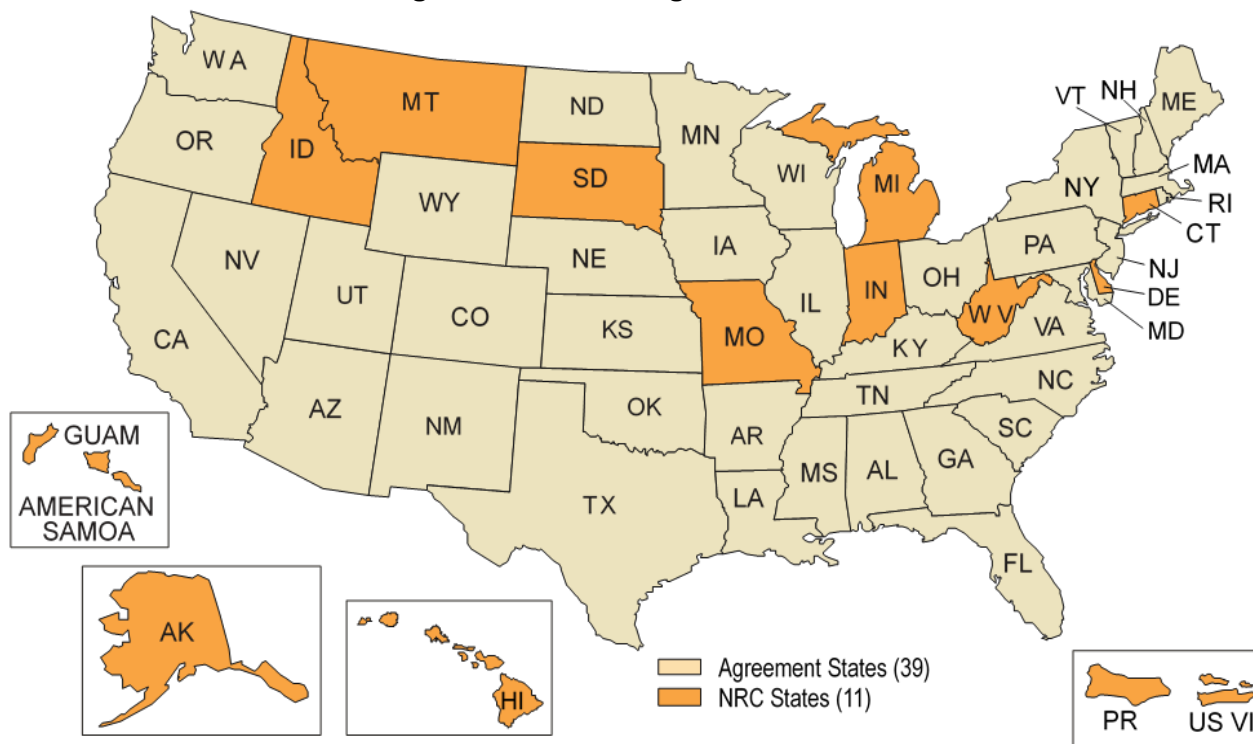


### Trends in the Agreement States—Calendar Year 2019

Under the authority granted in Section 274b of the Atomic Energy Act of 1954, as amended, the NRC may relinquish its authority to regulate certain byproduct material, source material, and limited quantities of special nuclear material to a State government through a mutual agreement. A State that has entered into this agreement with the NRC is called an Agreement State. When individuals contact the NRC with concerns about Agreement State licensees, the NRC staff explains the Agreement State program to the individual. Most of these individuals are willing to contact, and be contacted directly by, Agreement State personnel about their concerns. The NRC staff does not process the concern as an allegation but rather provides the concern to the Regional State Agreements Officer for referral to the Agreement State. If an individual wishes to remain anonymous to the Agreement State, the NRC staff still refers the concern to the Agreement State in accordance with the agreement, without divulging the concerned individual's identity. The NRC Office of Nuclear Material Safety and Safeguards addresses concerns about Agreement State program oversight outside of the Allegation Program.

Before becoming Agreement States, States must first demonstrate that their regulatory programs are adequate to protect public health and safety and are compatible with the NRC's program, and the NRC has a statutory responsibility to periodically review the actions of the Agreement States to ensure that they adequately maintain their programs. The NRC uses the Integrated Materials Performance Evaluation Program (IMPEP) to satisfy its statutory responsibility. More information on the NRC's Agreement State program and IMPEP is available on the Web site for the NRC's Office of Nuclear Material Safety and Safeguards at <https://scp.nrc.gov>. Figure 7 shows the 39 Agreement States.

**Figure 7 NRC and Agreement States**





In calendar year 2019, the NRC and its Agreement State partners completed routine IMPEP reviews of 10 Agreement State programs and 1 NRC region. The IMPEP teams evaluated the effectiveness of the Agreement State programs' responses to concerns from external sources by reviewing the casework and documentation for 183 cases cumulatively received by all of the programs reviewed. The NRC referred 32 of the 183 cases to the Agreement State programs; the States received the other concerns directly from concerned individuals. The IMPEP teams concluded that the Agreement State programs consistently took prompt and appropriate action in response to concerns raised. The review teams noted that the States collectively documented the results of their investigations and closeout actions, which included notifying concerned individuals of the outcomes of the investigations when the individuals' identities were known. The review team determined that all the Agreement States reviewed in 2019 adequately protected the identity of any concerned individual who requested anonymity. The IMPEP teams found no evidence that the Agreement States inappropriately released a concerned individual's identity. In general, the results of the 2019 IMPEP reviews demonstrate that the Agreement States continue to treat responses to concerns from external sources as a high priority in protecting public health and safety.

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## OVERVIEW OF PROGRAM ACTIVITIES

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The sections below discuss activities that took place in calendar year 2019 in areas closely related to the Allegation Program and SCWE policy, including statistics associated with the agency-sponsored preinvestigation ADR program. The staff gathers insights of the SCWE at a particular site in several ways (e.g., by reviewing the number and nature of allegations concerning a particular site and through documented observations based on interviews with the licensees' workers and the review of pertinent documents during the baseline PI&R inspections). If the staff discerns that a work environment is chilled (i.e., not conducive to raising safety concerns) or there is a finding of discrimination that has the potential to chill the work environment, the NRC may request, in writing, information about the licensee's SCWE.

### Requests for Information about Discrimination Findings

The U.S. Department of Labor (DOL) or a Federal authority other than the NRC (e.g., U.S. Circuit Court) periodically substantiates a discrimination concern under Section 211 of the Energy Reorganization Act of 1974, on which the NRC's employee protection regulations are based. In such cases, while the NRC is considering enforcement action, the staff typically will issue a request for additional information to the regulated entity. Such requests inform the licensee or contractor of the NRC's knowledge of the finding and interest in understanding the licensee's or contractor's position, including any actions that have been taken or are planned to assess and mitigate the potential chilling effect that the finding might cause. It also informs the workforce of the NRC's interest in the state of the environment for raising concerns at the site. At the time that the NRC issues such requests, the NRC normally has neither confirmed that enforcement is necessary nor that the work environment is chilled. Rather, information is acknowledged or, if necessary, sought to help inform the NRC's potential evaluation efforts going forward. The NRC issued one such letter of this nature in 2019.

On August 20, 2019, the Regional Administrator for DOL's OSHA Region IV found that there was reasonable cause to believe that TVA had discriminated against a complainant, in violation of Section 211 of the Energy Reorganization Act (42 U.S.C. §5851). This case began on December 18, 2018, when the DOL OSHA in Atlanta, GA, received complaints from a former TVA nuclear corporate licensing staff member. The complaints were amended on January 14, 2019, and May 2, 2019. The complainant alleged that TVA placed them on paid administrative leave and later terminated their employment in retaliation for raising multiple nuclear safety concerns and for participating in an investigation of a chilled work environment. In response to those complaints, OSHA conducted an investigation and reached the aforementioned conclusion. The NRC reviewed the OSHA finding, and on September 11, 2019, representatives of the NRC and TVA held a telephone conference call to discuss the OSHA finding. The NRC expressed concern that the finding might cause the TVA workforce to be less willing to raise safety concerns, and, on September 24, 2019 (ADAMS Accession No. ML19267A144), the NRC requested that TVA provide its position on whether the actions affecting the individual violated Title 10 of the *Code of Federal Regulations* (10 CFR) 50.7, "Employee Protection" (or other requirement), the basis for TVA's position, including the results of any investigations TVA may have conducted to determine whether a violation occurred, and the actions already taken or planned to provide assurance that the OSHA finding is not having an adverse impact on the willingness of employees to raise safety concerns.

In 2018 and 2019, the NRC conducted SCWE followup inspections for the group of concern at TVA. These inspections focused on the licensing and regulatory affairs organizations at the Sequoyah Nuclear Plant and TVA corporate nuclear staff.

The results of these inspections concluded that the interviewed staff felt free to raise nuclear safety concerns without fear of retaliation (ADAMS Accession Nos. ML18338A404 and ML19204A190). In response to the NRC's September 2019 request for information, the licensee initiated a discretionary SCWE mitigation plan in accordance with its procedures and discussed the NRC's letter and TVA's position on the OSHA finding with the impacted staff to address any concerns associated with the environment for raising concerns. The licensee ultimately settled the case at DOL. NRC enforcement on this case is ongoing.

### **Chilling Effect Letters**

When the NRC concludes that a licensee or contractor's work environment is chilled and corrective actions are warranted, the agency will typically issue a CEL. A CEL is intended to ensure that the licensee is taking appropriate actions to foster a workplace environment that encourages employees and contractors to raise safety concerns and to feel free to do so without fear of retaliation.

The NRC CEL issued to TVA in 2016 concerning the operations department at the Watts Bar site and expanded in 2018 to include the radiation protection department is still open, and corrective actions the licensee has taken to address the NRC staff's concern are under review, as discussed previously. The NRC issued no new CELs in 2019.

### **Preinvestigation Alternative Dispute Resolution Process**

The NRC's ADR program includes the opportunity to use voluntary dispute resolution early in the allegation process for cases of alleged discrimination before the NRC investigates the allegation. Preinvestigation ADR gives parties extra opportunities to resolve their differences outside the normal regulatory framework, and it uses a neutral third party to facilitate discussions and the timely settlement of the discrimination concern. The NRC believes that voluntary dispute resolution by the parties, using the communication opportunities that the preinvestigation ADR process supplies, can stem the inherent damage such disputes can inflict on the SCWE more quickly than an investigation. At any time, either party can exit the ADR process, at which point an NRC investigation remains an option if the alleged is still interested in pursuing the discrimination matter.

Should such an investigation and resulting enforcement panel conclude that enforcement is warranted, the NRC and licensee may engage in what the agency refers to as "enforcement ADR," formally referred to as postinvestigation ADR. The NRC provides more information on that process on the agency's public Web site, <http://www.nrc.gov/about-nrc/regulatory/enforcement/adr/post-investigation.html>. If, however, the parties reach a settlement during ADR, the staff will not pursue an investigation of or subsequent enforcement for the discrimination finding. The NRC also considers settlements resulting from licensee-initiated mediation as equivalent to settlements reached under the preinvestigation ADR program.

At the time the staff prepared this report, 10 of the preinvestigation ADR offers the NRC made in association with discrimination allegations raised in 2019 resulted in agreements to mediate. Of those 10 cases, 6 resulted in the parties reaching a mutually agreeable settlement. The remaining four are either still being processed or were referred to the NRC's Office of Investigations because the parties did not reach a settlement.

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**CONCLUSIONS**

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The total number of allegation concerns received from 2015 through 2019 declined over the 5-year period. The decline may be the result of a number of factors, including plant shutdowns and continuing efforts by the regulated industry to develop and maintain more supportive environments for raising concerns using onsite reporting avenues.

The analyses of allegations provide insights into the SCWE at two TVA plants and the licensee's corporate headquarters. The NRC has acted to engage this licensee about its work environments, and the staff will continue to monitor these sites with interest before resuming oversight through normal processes.

To date, the agency's preinvestigation ADR process has resulted in a number of discrimination allegations being settled between the parties before the start of an NRC investigation. Typically, between 50 and 75 percent of cases mediated reach settlement. The staff believes that voluntary dispute resolution by the parties, using the communication opportunities afforded by preinvestigation ADR, can stem the inherent damage such disputes can inflict on the SCWE more quickly than an investigation could.

The agency's and licensees' focus on the SCWE is likely contributing to the maintenance and improvement of the industry's environments for raising concerns and should continue.

## APPENDIX

ALLEGATION STATISTICS FOR  
OPERATING REACTORS, NONOPERATING REACTORS, AND FUEL CYCLE FACILITIES

## OPERATING REACTOR ALLEGATIONS RECEIVED FROM ONSITE SOURCES

Site	2015	2016	2017	2018	2019
Arkansas 1 & 2	10	7	4	6	4
Beaver Valley 1 & 2	1			1	
Braidwood 1 & 2	2	2	4	3	
Browns Ferry 1, 2, & 3	6	10	6	3	19
Brunswick 1 & 2	2	2	3	6	1
Byron 1 & 2	2	1		1	2
Callaway	5	2	5	2	1
Calvert Cliffs 1 & 2	1		4	2	3
Catawba 1 & 2	3			2	1
Clinton	1		1	2	1
Columbia Plant	3	4	3	5	1
Comanche Peak 1 & 2	3	3	5	1	1
Cook 1 & 2	5	2	4		
Cooper	1	1		1	1
Davis-Besse	1	3	1	2	
Diablo Canyon 1 & 2	4	3	2		4
Dresden 2 & 3	3	2	1	2	3
Duane Arnold	1	1	1		
Farley 1 & 2	2	4	4	5	
Fermi	9	2	2	6	
Fitzpatrick	1				1
Ginna		2	1		
Grand Gulf	4	6	3	11	2
Harris	6	2	5	2	2
Hatch 1 & 2	5	4	2	2	3
Indian Point 2 & 3	2	6	1	1	5
Lasalle 1 & 2	1	3		2	
Limerick 1 & 2	1		1		
McGuire 1 & 2	5	1	1	1	1
Millstone 2 & 3	4	8	8	2	2
Nine Mile Point 1 & 2		2	2	4	1
North Anna 1 & 2	3		3	1	3
Oconee 1, 2, & 3	7	5	1		1
Palisades	3	1	4	2	2
Palo Verde 1, 2, & 3	15	12	1	6	3
Peach Bottom 2 & 3	2	1			1

Site	2015	2016	2017	2018	2019
Perry	2		1		2
Point Beach 1 & 2	2	2	1		
Prairie Island 1 & 2	4	2			1
Quad Cities 1 & 2	4	2	2	1	
River Bend	3	4	3		2
Robinson		2	2	4	1
Salem/Hope Creek	14	9	7	7	5
Seabrook	1	1	1		
Sequoyah 1 & 2	7	17	7	6	9
South Texas 1 & 2	7	8	9	8	3
St Lucie 1 & 2	6	4	5	1	5
Summer	4	3	2	3	5
Surry 1 & 2	2	1	2	1	1
Susquehanna 1 & 2	3	2	6	4	1
Turkey Point 3 & 4	8	8	3	5	3
Vogle 1 & 2	5	3	3	2	3
Waterford	2	6	3	1	1
Watts Bar 1 & 2	21	30	11	29	21
Wolf Creek	12	7	4	8	2

**NONOPERATING REACTOR ALLEGATIONS RECEIVED FROM ONSITE SOURCES**

Site	2015	2016	2017	2018	2019
Fort Calhoun	6	3	2	1	
Humboldt Bay	1			1	
La Crosse		1			
Oyster Creek	3	1	3	2	
Pilgrim	10	10	8		
San Onofre 2 & 3				4	2
Summer 2 & 3	30	14	8		
Three Mile Island			2		1
Vermont Yankee		1	2	1	
Vogtle 3 & 4	40	61	35	9	13
Yankee Rowe					1

**FUEL CYCLE FACILITY ALLEGATIONS RECEIVED FROM ONSITE SOURCES**

Site	2015	2016	2017	2018	2019
BWXT		3	2	1	1
CB&I Areva MOX	2	3	1		
Global Nuclear	3	4	4	6	
Honeywell	5	4	2	1	
Louisiana Energy Services	4	1	1	2	1
Nuclear Fuel Services	4	2	1	9	2
Westinghouse	1	1	2	1	4