

**BEFORE THE BOARD OF INDUSTRIAL INSURANCE APPEALS  
STATE OF WASHINGTON**

1     **IN RE: AMY M. ELSEY**                                     )  
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3     **CLAIM NO. SL-55805**                                     )  
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**DOCKET NO. 19 25936**  
**DECISION AND ORDER**

Amy M. Elsey worked as a clerical office worker at the Hanford nuclear site between 1986 and 1993. In 2016, at the age of 47, she was diagnosed with chronic lymphocytic leukemia (CLL). She filed a claim for benefits with the Department of Labor and Industries, and the Department allowed the claim as an occupational disease under RCW 51.32.187, the so-called Hanford presumption statute. The employer, U.S. Department of Energy (DOE), appealed. Following a hearing, our industrial appeals judge determined that the DOE showed by clear and convincing evidence that Ms. Elsey's CLL did not arise naturally and proximately from her employment at Hanford, and that the claim should be rejected. Ms. Elsey and the Department of Labor and Industries separately filed Petitions for Review asking the Board to affirm the Department's order and allow the claim. We determine that the DOE failed to rebut the presumption of occupational relatedness by clear and convincing evidence. The Department order is **AFFIRMED**.

**DISCUSSION**

From September 1986 through August 1987, Ms. Elsey worked at the Hanford nuclear site while a senior in high school, and then full-time over the following summer. During this time, she worked as a clerk in the bus barn building located just outside of the city limits of Richland. The building includes an open bay for buses which shuttle employees to various locations at the Hanford site. According to Ms. Elsey, the bus barn smelled like a car garage. Although her duties were administrative, she walked through or near the bus bays on a regular basis distributing mail to different offices.

From June 1989 to July 1993, Ms. Elsey returned to the Hanford site full-time as an executive secretary assistant. She worked in the solid waste management division in building 2750. Her office was located about 1.2 or 1.3 miles from tank farms in the 200 East area. At some point during this interim, the solid waste management division was moved to the 1100 building, which is close to the Washington Public Power Supply System (WPPSS). For about a year, Ms. Elsey's supervisor was responsible for operations at the T-plant. The T-plant ceased plutonium separation in about 1956, and thereafter, the building was used to store sludge from the 100K area in drums. Ms. Elsey occasionally accompanied her supervisor to the T-plant. She reported consistently smelling odd odors while performing these duties. She also covered for clerks at the T-plant who were on vacation.

1 After 1993, Ms. Elsey left Hanford and moved to Western Washington where she went to college and  
2 pursued a career as a clinical supervisor at a mental health facility.  
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4 Because Ms. Elsey's work at Hanford was primarily administrative, she was not required to  
5 wear personal protective equipment (PPE) during her employment. However, she was required to  
6 wear a basic dosimeter for radiation exposure. Federal regulations limit radiological exposure to  
7 5,000 millirems for the whole body on an annual basis. According to Ms. Elsey's employment records,  
8 she received 30 millirems of shallow and deep radiation exposure during her entire work history at  
9 Hanford. By comparison, a chest x-ray produces about 25-30 millirems.  
10

11 In 2016, at age 47, Ms. Elsey was diagnosed with chronic B-cell lymphocytic leukemia (CLL).  
12 Following her diagnosis, Ms. Elsey filed a claim for benefits with the Department of Labor and  
13 Industries. The Department allowed the claim based on RCW 51.32.187, the Hanford presumption  
14 statute, and the DOE appealed. Under RCW 51.32.187, Hanford site workers who are diagnosed  
15 with certain enumerated diseases or conditions, including leukemia, are presumed to have an  
16 occupational disease arising naturally and proximately from their employment at the Hanford site. To  
17 overcome this presumption, the DOE must show by clear and convincing evidence that Ms. Elsey's  
18 CLL did not arise naturally and proximately out of the distinctive conditions of her employment at the  
19 Hanford site. If the DOE rebuts the statutory presumption, the burden returns to Ms. Elsey and the  
20 Department to prove that her CLL arose naturally and proximately from distinctive conditions of her  
21 employment at the Hanford site.  
22

23 Based on expert witness testimony, we ascertain that leukemia refers to a proliferation of white  
24 blood cells in the bloodstream. CLL can persist for a long time, as opposed to other acute forms of  
25 leukemia which tend to have a much shorter course. CLL is a relatively common kind of leukemia,  
26 but it is not common among people in their late forties. The only clear risk factor appears to be  
27 advanced age. The average age of diagnosis is about 70 years.  
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29 There is no known external cause of CLL, and potential associations remain unclear.  
30 Exposure to radiation is not a known risk factor for CLL. There is no strong association between  
31 smoking and CLL, although some components of smoking, such as benzene, would contribute to the  
32 potential for developing CLL. (Ms. Elsey has a history of smoking one to two packs of cigarettes a  
33 week from about age 18 through age 29.) Epidemiological studies suggest that Asian populations  
34 are less likely to get CLL than Caucasian populations. However, studies do not identify whether  
35 Asian populations are doing something preventative, or whether Caucasian populations are doing  
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1 something that increases their risk. For every three men who are diagnosed with CLL, about two  
2 women are diagnosed with it.  
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4 Ms. Elsey's employment records do not indicate that she was exposed to chemicals or vapors  
5 while employed at the Hanford site. However, Ms. Elsey's expert witnesses testified that from the  
6 mid-1980s to the mid-1990s, monitoring at Hanford focused solely on radiation exposure even though  
7 there were many chemicals at the site. Chemical monitoring was limited through the 1980s and was  
8 not very effective as judged by the Government Accountability Office. Between the 1980s and 1990s,  
9 Hanford did not maintain data on potential harmful vapors that were expelled into the air, nor their  
10 specific location and proximity to buildings on site. The DOE's expert witnesses did not dispute this  
11 contention.  
12

13 In the present appeal, there is no dispute that Ms. Elsey qualifies as a Hanford site worker, or  
14 that she was diagnosed with CLL, which is one of the conditions identified by our Legislature as  
15 having a presumption of occupational relatedness. The parties' dispute relates to proximate cause.  
16 Specifically, they disagree about whether Ms. Elsey was exposed to radiation or chemicals, and  
17 whether her CLL was related to her work at Hanford.  
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### 19 **Opinions of DOE's Expert Witnesses**

#### 20 Lawrence Yearsley

21 Lawrence Yearsley is an industrial hygienist for the U.S. Department of Energy in Richland.  
22 He has a master's degree in occupational safety and health environmental management. In  
23 Mr. Yearsley's opinion, Ms. Elsey was not exposed to chemicals or vapors during her work at  
24 Hanford, other than typical office products, such as white board cleaners. He did not consider her  
25 work location close enough to the tank farms, or other known hazards, to create a risk of exposure.  
26 He was not aware of any incident where Ms. Elsey's job duties placed her in a position where the  
27 inhalation of hazards, such as plutonium or radiation, was a potential.  
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#### 29 Brent Burton, M.D.

30 Brent Burton, M.D., is a physician specializing in occupational medicine and medical  
31 toxicology. He has a master's degree in public health. In Dr. Burton's opinion, Ms. Elsey would have  
32 developed CLL regardless of whether she worked at Hanford. He emphasized that she worked in an  
33 office setting, some distance away from the tank farms, and she did not directly handle hazardous  
34 chemicals or hazardous waste with radiation.  
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1 According to Dr. Burton, the hypothesis that CLL is caused by or associated with exposure to  
2 radiation is a hypothesis that "cannot be considered."<sup>1</sup> He offered that there are no medical  
3 epidemiologic studies proving that either a high dose or low dose of radiation can cause or is  
4 associated with CLL. Thus, in his opinion, even if Ms. Elsey had been exposed to high doses of  
5 radiation, they would not support a causal connection. He explained that benzene is also not  
6 associated with CLL.  
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10 Dr. Burton also did not consider Ms. Elsey to have been exposed to carcinogens while working  
11 at the Hanford site either. He reasoned that carcinogenic products do not generally make it into the  
12 market place, so people do not have access to them. Dr. Burton did not appear concerned about a  
13 lack of chemical and vapor exposure data from the mid-1980s to the mid-1990s, particularly where  
14 Ms. Elsey worked in an office environment. He stated, "I don't know the specifics about how they  
15 kept records, but the data we have is what I have to reply [*sic*] upon."<sup>2</sup>  
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19 Robert Levenson, M.D.

20 Dr. Levenson is board certified in oncology and internal medicine. He performed a records  
21 review and evaluated Ms. Elsey in July of 2019. He agreed with the diagnosis of CLL. Dr. Levenson  
22 was not aware of any relationship between the level of radiation Ms. Elsey was exposed to and CLL.  
23 He was also not aware of a known relationship between vehicle exhaust and CLL. And, he was not  
24 aware of Ms. Elsey being exposed to any chemicals in her work. In Dr. Levenson's opinion, the  
25 probability that Ms. Elsey would have developed CLL would have been the same if she had never  
26 worked at Hanford.  
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31 **Opinions of Ms. Elsey's Expert Witnesses**

32 Bruce Miller

33 Mr. Miller has worked in the field of industrial hygiene and radiation protection since 1987. His  
34 background includes evaluating projects at the Hanford site, and writing, reviewing or approving  
35 health and safety plans at the site. Mr. Miller reviewed Ms. Elsey's records, and interviewed her on  
36 August 2, 2021. Mr. Miller pointed out that exhaust systems in buildings such as the Hanford bus  
37 barn have been a problem throughout their existence, particularly in the 1980s. Ms. Elsey would  
38 have been exposed to fuels and exhaust as she walked through those areas.  
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<sup>1</sup> 4/5/21 Tr. at 70.

47 <sup>2</sup> 4/5/21 Tr. at 79.

1 In Mr. Miller's opinion, he could not "rule out that her exposures at Hanford, her work at Hanford  
2 was a source for causation for her CLL."<sup>3</sup> In his opinion, fuels, organic vapor and diesel exhaust  
3 were present in the areas where Ms. Eley worked. He stated that he found "several studies" which  
4 documented a known risk and association between exposure to organic vapors and benzene to  
5 chronic lymphocytic leukemia.  
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9 Mr. Miller also pointed out that Ms. Eley only wore a basic dosimeter, which does not pick up  
10 neutron radiation. For two-and-a-half years, Ms. Eley worked at the T-plant where neutron  
11 radiation was present. Therefore, in his opinion, there was a potential for exposure which was not  
12 monitored, and would not have been documented.  
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14 Paul S. Darby, M.D.

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16 Dr. Darby is a board certified occupational and environmental physician with experience in  
17 radiation exposure. He has experience with the Hanford facility.  
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19 According to Dr. Darby, there is evidence of a correlation between CLL and chemical  
20 exposure. There are a number of studies which show an association between benzene, cadmium,  
21 and polycyclic aromatic hydrocarbons that lead to CLL, among other cancers. Ms. Eley would have  
22 been exposed to exhaust containing diesel particles, as well as carcinogens known as polycyclic  
23 aromatic hydrocarbons. Also, cadmium is one of the many toxic chemicals at Hanford. Due to the  
24 lack of monitoring data during the time Ms. Eley worked at Hanford, he could not say whether she  
25 had been exposed to chemicals at Hanford.  
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29 Joyce Tsuji, PhD.

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31 Joyce Tsuji is a board certified toxicologist. Her technical discipline is toxicology and risk  
32 assessment. Dr. Tsuji emphasized that Ms. Eley would have been exposed or potentially exposed  
33 to diesel exhaust, solvents and petroleum hydrocarbon at the bus barn. She pointed out that  
34 Ms. Eley would have had some exposure while performing clerical activities at the T-plant, where  
35 waste is stored, and there is a long list of chemicals associated with that building.  
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38 Regarding proximate cause, Dr. Tsuji stated, "You cannot rule out that the site could have  
39 contributed to her exposures given the scientific knowledge."<sup>4</sup> Dr. Tsuji explained that "there is  
40 scientific literature that indicates linkages between benzene and solvents and other types of  
41 substances from occupational exposures from diesel exhaust emissions and chronic lymphocytic  
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46 <sup>3</sup> Miller at 24.

47 <sup>4</sup> Tsuji at 16.

1 leukemia and other blood disorders or cancers."<sup>5</sup> She acknowledged that CLL is "not as tightly linked  
2 causally to benzene and other solvents," but the International Agency on Research on Cancer has  
3 found that benzene is a human carcinogen, and there is "strong mechanistic evidence that benzene  
4 metabolites, acting alone or with other substances, produce multiple genotoxic effects to blood  
5 forming cells resulting in chromosomal changes in humans that are consistent with leukemia and  
6 lymphoma."<sup>6</sup> She also referred to other studies which provide epidemiological evidence and  
7 mechanistic evidence that there is an association between petrochemical exposure and CLL.  
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11 Dr. Tsuji also testified that CLL is rarely seen in people aged 46 or 47. The numbers gradually  
12 increase with age, typically when one is over 70.  
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### 14 **Proposed Decision and Order**

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16 Following a hearing, our industrial appeals judge determined that the DOE proved by clear  
17 and convincing evidence that Ms. Eley's CLL did not arise naturally and proximately from distinctive  
18 conditions of her work at the Hanford site. We weigh the evidence differently and find that the DOE  
19 failed to rebut the presumption of occupational relatedness.  
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22 Although Ms. Eley only worked at Hanford in an administrative setting for about 5 years, she  
23 worked in proximity to chemicals and other hazardous substances. The DOE's experts concluded  
24 that Ms. Eley was not exposed to radiation beyond acceptable levels, and that she was not exposed  
25 to chemicals beyond those contained in general office products. However, their opinions are  
26 undermined by Hanford's lack of records regarding potential chemical exposures during the time  
27 Ms. Eley worked at Hanford.  
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31 The record also establishes that the cause of CLL is not known. As pointed out by the  
32 Department in its petition for review, "Not knowing what causes something does not mean that  
33 nothing causes it. Not knowing means just that—not knowing."<sup>7</sup> The lack of data does not mean that  
34 an association between CLL and exposure to radiation or chemicals does not exist.  
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37 We find it significant that Ms. Eley worked at the Hanford site at a young age for almost 5  
38 years. She worked primarily in an office setting, but she also worked on the grounds either delivering  
39 mail or accompanying her supervisor at the T-plant, a sludge storage site facility. Thus, while  
40 Ms. Eley did not handle chemicals directly, her duties put her in proximity to chemicals at the site.  
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45 <sup>5</sup> Tsuji at 15.

46 <sup>6</sup> Tsuji at 16-17.

47 <sup>7</sup> Department's PFR, at 3.

1 Her employment records document low levels of exposure to radiation, but they are incomplete to  
2 the extent that her exposure to chemicals was not monitored, and is therefore, unknown. Ms. Elsey  
3 developed LLC at the age of 47, which is a relatively rare occurrence. Based on this record, we find  
4 that the DOE failed to demonstrate with clear and convincing evidence that Ms. Elsey's CLL was not  
5 proximately caused or aggravated by her employment at Hanford.  
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### 8 **DECISION**

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10 In Docket No. 19 25936, the employer, U.S. Department of Energy, filed an appeal with the  
11 Board of Industrial Insurance Appeals on December 12, 2019, from an order of the Department of  
12 Labor and Industries dated October 25, 2019. In this order, the Department allowed Amy Elsey's  
13 claim for an occupational disease under RCW 51.32.187. This order is correct and is **AFFIRMED**.  
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### 16 **FINDINGS OF FACT**

- 17  
18 1. On February 4, 2020, an industrial appeals judge certified that the parties  
19 agreed to include the Jurisdictional History in the Board record solely for  
20 jurisdictional purposes.
- 21  
22 2. The U.S. Department of Energy (DOE) operates the Hanford nuclear site  
23 in southeastern Washington. Amy M. Elsey was engaged in the  
24 performance of work, either directly or indirectly, for the United States,  
25 regarding projects and contracts at the Hanford nuclear site. She worked  
26 on the site at the two hundred east location for approximately 5 years.
- 27  
28 3. From September 1986 through June 1987, while in high school,  
29 Amy M. Elsey worked 20 hours a week as a clerk for Rockwell, a DOE  
30 contractor, in the bus barn on the Hanford site. From June 1987 through  
31 August 1987, she worked 40 hours a week in the same job. She worked  
32 primarily in an office setting, but she also worked in and around the bus  
33 barn delivering mail. In and around the bus barn, Ms. Elsey was exposed  
34 or potentially exposed to diesel exhaust, evaporated automotive fluids,  
35 and evaporated paint solvents.
- 36  
37 4. From June 1989 through July 1993, Ms. Elsey worked for Westinghouse,  
38 a DOE contractor, in office buildings on the Hanford site. Sometimes, she  
39 worked in the office portion of the T-plant. The T-plant ceased plutonium  
40 separation in about 1956, and thereafter, the building was used to store  
41 sludge from the 100K area in drums. Chemicals are also associated with  
42 the T-plant building. For about a year, Ms. Elsey's supervisor was  
43 responsible for operations at the T-plant. She occasionally accompanied  
44 her supervisor to the T-plant.
- 45  
46 5. Ms. Elsey's employment records document low levels of exposure to  
47 radiation. Over her entire career working at the Hanford site, she was  
exposed to 30 millirems of radiation. Any exposure to chemicals was not

1 monitored, and is therefore, unknown. There is evidence of a correlation  
2 between CLL and chemical exposure.

- 3  
4 6. On or about February 2, 2016, at age 47, Ms. Eley was diagnosed with  
5 chronic lymphocytic leukemia (CLL). There is no known external cause  
6 of CLL. Exposure to radiation is not a known risk factor for CLL. The only  
7 clear risk factor appears to be advanced age. The average age of  
8 diagnosis is about 70 years. The development of CLL at the age of 47 is  
9 a relatively rare occurrence.

10 **CONCLUSIONS OF LAW**

- 11 1. The Board of Industrial Insurance Appeals has jurisdiction over the parties  
12 and subject matter in this appeal.  
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14 2. Ms. Eley was a Hanford site worker within the meaning of  
15 RCW 51.32.187(1)(b).  
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17 3. There is a prima facie presumption that Ms. Eley's chronic lymphocytic  
18 leukemia was proximately caused or aggravated by distinctive conditions  
19 of her employment at Hanford. The DOE failed to rebut the presumption  
20 with clear and convincing evidence. RCW 51.32.187.  
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22 4. The Department's October 25, 2019 order is correct and is affirmed.

23 Dated: March 8, 2022.

24 BOARD OF INDUSTRIAL INSURANCE APPEALS

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26 MARK JAFFE, Acting Chairperson

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28 ISABEL A. M. COLE, Member  
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33 **DISSENT**

34 I dissent. Our industrial appeals judge correctly determined that the DOE showed by clear  
35 and convincing evidence that Ms. Eley's chronic lymphocytic leukemia did not arise naturally and  
36 proximately from her Hanford site employment.  
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39 The record establishes that exposure to radiation is not a known risk factor for CLL. Even if  
40 there were a known association between radiation exposure and CLL, the record shows that  
41 Ms. Eley was exposed to 30 millirems of radiation during her entire work history at Hanford. This is  
42 about the equivalent of an x-ray, and well below the Federal limits of radiological exposure of  
43 5,000 millirems for the whole body on an annual basis. Because it is highly unlikely that radiation  
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1 exposure is the cause of Ms. Elsey's CLL, her expert witnesses focused primarily on her potential  
2 exposure to hazardous chemicals which are potentially associated with CLL.  
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4 The record demonstrates that Ms. Elsey was neither required nor expected to handle any  
5 chemicals other than common office cleaning products. At most, Ms. Elsey may have been  
6 incidentally exposed to sub-acute levels of diesel exhaust, evaporated paint solvents, and evaporated  
7 automobile fluids. Ms. Elsey never sought medical care for chemical exposure during her work at  
8 Hanford, thus suggesting that she had no acute chemical exposures. Moreover, mechanics, painters  
9 and diesel vehicle truck drivers have much greater risk of exposure to these chemicals, yet  
10 epidemiological studies have not quantified a risk of developing CLL from those types of occupations.  
11 The record demonstrates, therefore, that it is also highly unlikely Ms. Elsey's potential exposure to  
12 chemicals at Hanford was a cause of her CLL.  
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18 Our industrial appeals judge correctly gave the greatest weight to Dr. Levenson, a highly  
19 qualified oncologist who personally examined Ms. Elsey. Dr. Levenson did not rely on the absence  
20 of documentation regarding chemical exposures while Ms. Elsey was employed at Hanford. Instead,  
21 he relied on his review of Ms. Elsey's medical records, his physical exam, and his review of the  
22 medical literature. In his opinion, Ms. Elsey would have developed CLL even if she had not worked  
23 at Hanford. He stated, "There is no clear evidence . . . to suggest that her employment [at the Hanford  
24 site] caused her CLL."<sup>8</sup> Dr. Levenson's persuasive opinions are supported by the record and should  
25 have been given the greatest weight in this appeal.  
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30 I would find that the DOE demonstrated with clear and convincing evidence that Ms. Elsey's  
31 CLL was not proximately caused or aggravated by her employment at Hanford. Our industrial  
32 appeals judge's decision is correct and the Department's order on appeal should be reversed and  
33 remanded with direction to the Department to deny the claim.  
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35 Dated: March 8, 2022.  
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37 BOARD OF INDUSTRIAL INSURANCE APPEALS

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40 JACK S. ENG, Member  
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<sup>8</sup> Levenson Dep. at 15-16.

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3 **Addendum to Decision and Order**  
4 **In re Amy M. Elsey**  
5 **Docket No. 19 25936**  
6 **Claim No. SL-55805**

7 **Appearances**

8 Claimant, Amy M. Elsey, by Smart Law, per Charlynn R. Hull

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10 Self-Insured Employer, U.S. Department of Energy, by Wallace, Klor, Mann, Capener & Bishop,  
11 P.C., per Lawrence E. Mann

12 Department of Labor and Industries, by Office of the Attorney General, per James S. Johnson

13  
14 **Petition for Review**

15 As provided by RCW 51.52.104 and RCW 51.52.106, this matter is before the Board for review  
16 and decision. The claimant and Department filed timely Petitions for Review of a Proposed Decision  
17 and Order issued on September 20, 2021, in which the industrial appeals judge reversed and  
18 remanded the Department order dated October 25, 2019. The employer filed a response to the  
19 Petitions for Review.  
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21 **Evidentiary Rulings**

22 The Board has reviewed the evidentiary rulings in the record of proceedings and finds that no  
23 prejudicial error was committed. The rulings are affirmed.  
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