

FOR PUBLICATION
UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

In re: HANFORD NUCLEAR
RESERVATION LITIGATION,

BARBARA JEAN PHILLIPS,
Plaintiff,

and

WANDA BUCKNER; SHIRLEY
CARLISLE,
Plaintiffs-Appellants,

v.

E.I. DUPONT DE NEMOURS & Co., a
Delaware corporation; GENERAL
ELECTRIC Co., a New York
corporation; UNC NUCLEAR
INDUSTRIES, INC., a Delaware
corporation,
Defendants-Appellees.

No. 05-35648
D.C. No.
CV-91-03015-WFN

In re: HANFORD NUCLEAR
RESERVATION LITIGATION,

BARBARA JEAN PHILLIPS,
Plaintiff,

and

GLORIA HOPE; CLARA REISS;
GLENDA WINSLOW; KATHRYN J.
GOLDBLOOM, aka Kathryn Janelle
Goldbloom,
Plaintiffs-Appellants,

v.

E.I. DUPONT DE NEMOURS & Co., a
Delaware corporation; GENERAL
ELECTRIC Co., a New York
corporation; UNC NUCLEAR
INDUSTRIES, INC., a Delaware
corporation,
Defendants-Appellees.

No.05-35651
D.C. No.
CV-91-03015-WFN

In re: HANFORD NUCLEAR
RESERVATION LITIGATION,

BARBARA JEAN PHILLIPS,
Plaintiff,

and

GLORIA HOPE; CLARA REISS;
GLENDA WINSLOW; WANDA
BUCKNER; KATHRYN J. VANCAMPEN,
aka Kathryn Janelle Goldbloom;
SHIRLEY CARLISLE,
Plaintiffs-Appellees,

v.

E.I. DUPONT DE NEMOURS & Co., a
Delaware corporation; GENERAL
ELECTRIC Co., a New York
corporation,
Defendants-Appellants,

and

UNC NUCLEAR INDUSTRIES, INC., a
Delaware corporation,
Defendant.

No. 05-35678
D.C. No.
CV-91-03015-WFN

BARBARA JEAN PHILLIPS,
Plaintiff,

and

STEVEN STANTON; GLORIA WISE,
Plaintiffs-Appellees,

v.

E.I. DUPONT DE NEMOURS & Co.;
GENERAL ELECTRIC Co.,
Defendants-Appellants.

No. 05-35866
D.C. No.
CV-91-03015-WFN

PAMELA DURFEY; PAULENE ECHO
HAWK; DOROTHY GEORGE, on their
own behalf and on behalf of a
class of similarly situated persons,
Plaintiffs-Appellants,

v.

E. I. DUPONT DE NEMOURS & Co.,
a Delaware Corporation; GENERAL
ELECTRIC Co., a New York
Corporation, UNC NUCLEAR
INDUSTRIES, INC., a Delaware
Corporation, ATLANTIC RICHFIELD
COMPANY, ATLANTIC RICHFIELD-
HANFORD Co., a Washington
Corporation; ROCKWELL
INTERNATIONAL CORP., a Delaware
Corporation; WESTINGHOUSE
HANFORD CORP., a Delaware
Corporation; WESTINGHOUSE
ELECTRIC CORP., a Pennsylvania
Corporation,
Defendants-Appellees.

No. 05-35892
D.C. No.
CV-93-03087-WFN

In re: HANFORD NUCLEAR
RESERVATION LITIGATION,

PAMELA DURFEY; PAULINE ECHO
HAWK; DOROTHY GEORGE, on their
own behalf and on behalf of a
class of similarly situated persons,
Plaintiffs-Appellants,

v.

E.I. DUPONT DE NEMOURS & Co., a
Delaware corporation; GENERAL
ELECTRIC Co., a New York
corporation; UNC NUCLEAR
INDUSTRIES, INC., a Delaware
corporation; ATLANTIC RICHFIELD
COMPANY; ATLANTIC RICHFIELD-
HANFORD Co., a Washington
corporation; ROCKWELL
INTERNATIONAL CORP., a Delaware
corporation; WESTINGHOUSE
HANFORD CORPORATION, a Delaware
corporation; WESTINGHOUSE
ELECTRIC CORP., a Pennsylvania
corporation,
Defendants-Appellees.

No. 05-35895
D.C. No.
CV-91-03015-WFN

In re: HANFORD NUCLEAR
RESERVATION LITIGATION,

SHANNON C. RHODES,
Plaintiff-Appellant,
v.

E.I. DUPONT DE NEMOURS & Co., a
Delaware corporation; GENERAL
ELECTRIC Co., a New York
corporation,
Defendants-Appellees.

No. 06-35165
D.C. No.
CV-91-03015-WFN
OPINION

Appeal from the United States District Court
for the Eastern District of Washington
Wm. Fremming Nielsen, Senior Judge, Presiding

Argued and Submitted
February 7, 2007—Pasadena, California

Filed August 14, 2007

Before: Mary M. Schroeder, Chief Circuit Judge,
Alfred T. Goodwin and Michael Daly Hawkins,
Circuit Judges.

Opinion by Chief Circuit Judge Schroeder

COUNSEL

Peter Nordberg, Berger & Montague, P.C., Philadelphia, Pennsylvania; Roy S. Haber, Roy S. Haber, P.C., Eugene, Oregon; Daniel Johnson and David Breskin, Short Cressman & Burgess, PLLC, Seattle, Washington, for the plaintiffs-appellants-appellees.

Christopher Landau, Kirkland & Ellis, LLP, Washington, D.C., for the defendants-appellees-appellants.

OPINION

SCHROEDER, Chief Circuit Judge:

I. Introduction.

The origins of this case trace back more than sixty years to the height of World War II when the federal government solicited Appellants E.I. DuPont de Nemours & Co., General Electric, Inc., UNC Nuclear Industries, Inc., Atlantic Richfield Co., and Rockwell International Corp., (collectively "Defendants") to operate the Hanford Nuclear Weapons Reservation ("Hanford") in southeastern Washington. The Hanford Reservation was a plutonium-production facility that helped make the atomic bomb that dropped on Nagasaki, Japan in World War II.

A regrettable Hanford byproduct was the radioiodine emitted into the surrounding area. The plaintiffs in this litigation are over two thousand residents who now claim that these emissions, known as I-131, caused various cancers and other life-threatening diseases. The first group of plaintiffs filed a complaint in 1990 under the federal statute governing nuclear accidents, the Price-Anderson Act ("PAA"), claiming they were entitled to damages for injuries arising from a nuclear

incident pursuant to 42 U.S.C. § 2210. The history is discussed in our earlier opinions in *In re Hanford Nuclear Reservation Litigation*, 292 F.3d 1124 (9th Cir. 2002) (“*In re Hanford*”); and *Berg v. E.I. DuPont de Nemours & Co.*, 293 F.3d 1127 (9th Cir. 2002) (“*Berg*”). After almost two decades of litigation, which already has included two appeals to this court, the parties in 2005 agreed to a bellwether trial. The trial was designed to produce a verdict that would highlight the strengths and weaknesses of the parties’ respective cases and thus focused on six plaintiffs (“Plaintiffs”) who were representative of the larger group. The purpose of the trial was to promote settlement and bring long-overdue resolution to this litigation.

Before us on appeal is a litany of issues stemming from the bellwether trial. A threshold issue is whether Defendants may seek complete immunity under the common law government contractor defense, because they were operating Hanford at the request of the federal government. We hold that the defense is inapplicable as a matter of law, because Congress enacted the PAA before the courts recognized the government contractor defense, and the PAA provides a comprehensive liability scheme that precludes Defendants’ reliance on such a defense.

In the alternative, Defendants argue that even if they are not immune, they are not strictly liable for any I-131 emissions, because the amounts of the emissions were within federally-authorized levels; the plutonium-production process was not an abnormally dangerous activity that would create strict liability; and even if it were, Defendants qualify for the “public duty” exception to strict liability. The district court held that none of Defendants’ contentions were sufficient to relieve them of strict liability for the injuries they caused. We agree.

With respect to the trial itself, the district court with admirable diligence ruled on many issues of first impression. We

hold that under Washington law, the district court properly instructed the jury that to impose liability, it had to find Hanford was the “but for” cause of Plaintiffs’ diseases and not just a contributing cause under the more lenient “substantial factor” test. The court also made a host of evidentiary rulings that are before us on appeal. We hold that three of these rulings constitute reversible error with respect to three of the Bellwether Plaintiffs.

There are statute of limitations issues as well. We hold that any Hanford Plaintiffs who filed independent suits pending class certification lost the benefits of class action tolling, thus potentially rendering their suits untimely. Because the record before us is incomplete as to the date necessary to measure the appropriate tolling period for various plaintiffs, we remand the statute of limitations issues to the district court for further proceedings.

Lastly, we hold that the district court properly dismissed any medical monitoring claims as not cognizable under the PAA. This is consistent with our decision in *Berg*, 293 F.3d 1127.

II. Background.

The United States government constructed Hanford during World War II to manufacture plutonium for military purposes. The facility was a component of the Army Corps of Engineer’s secret Manhattan Project, with the primary objective of developing an atomic bomb. In 1942, the Army Corps began hiring civilian contractors to help build and operate the Hanford facility. It first recruited the University of Chicago Metallurgical Laboratory (“Met Lab”) to design the process and equipment to produce plutonium. It then solicited E.I. DuPont de Nemours & Co. (“DuPont”) to actually run the facility. It is apparent the government itself did not have the expertise or resources to operate Hanford.

DuPont initially refused. The government, however, persisted and implored DuPont to run the plutonium-production facility, because, as the government provided in DuPont's contract, the project was of the "utmost importance" and was "necessary in facilitating the prosecution of the war." DuPont eventually acquiesced, stating it would run the facility out of patriotic considerations. It accepted only one dollar as payment for its services. Several years later, the Hanford facility successfully produced the plutonium that was used in 1945 to drop the atomic bomb on Nagasaki and effectively end World War II. (The bomb dropped on Hiroshima was uranium-based, not plutonium-based).

As part of the plutonium-production process, the Hanford facility emitted I-131, a fission byproduct known as radioiodine. I-131 was known at the time to have potential adverse health effects on humans. Accordingly, the Met Lab scientists set tolerance doses for human exposure. For example, the Met Lab determined that the human thyroid should not absorb more than one rad per day for those individuals subject to continuous exposure in the area. A rad is a measurement of the amount of radioiodine absorbed into an organ or tissue. On the basis of these safe exposure limit estimates, the Met Lab approved a detailed operating procedure that would ensure that the plutonium was produced within those emission limits. The key to decreasing I-131 emissions was to allow for longer cooling times of the uranium slugs used to produce the plutonium. This strategy, however, often conflicted with the federal government's orders to increase plutonium production.

On September 1, 1946, DuPont transferred its duties to General Electric ("GE"), which also agreed to earn no profit from its work. GE ran the Hanford facility through the Cold War. During the period of its operation, GE asked the federal government to increase cooling times to allow for lower emissions of I-131. By this time, Congress had established the Atomic Energy Commission ("AEC"), *see* 42 U.S.C.

§§ 2011-2013 (1946), and GE was bound by its determinations. The AEC denied the request for longer cooling times, and GE continued to produce plutonium consistent with government demands. By the 1950s, however, significant improvements were made to the production process, and I-131 emission levels dropped.

In 1987, the United States Department of Energy (“DOE”) created the Hanford Environmental Dose Reconstruction Project (“HEDR”), overseen by the Center for Disease Control and Prevention. The underlying purpose of the HEDR was to estimate and reconstruct all radionuclide emissions from Hanford from 1944 to 1972 in order to ascertain whether neighboring individuals and animals had been exposed to harmful doses of radiation. Of particular concern to the HEDR were the estimated doses of I-131 received by the thyroid glands of humans, principally through consumption of milk from cows that ingested contaminated vegetation on neighboring farms and pastures. The HEDR concluded that I-131 emissions peaked during the period from 1944 to 1946, when an estimated 88% of Hanford’s total iodine emissions occurred. HEDR explained that in later years, emissions declined because of technological advances. In 1990, the Technical Steering Panel of HEDR released a report entitled Initial Hanford Radiation Dose Estimates that publicly disclosed for the first time that large quantities of radioactive and non-radioactive substances had been released from Hanford, beginning in the 1940s.

This disclosure sparked a blaze of litigation. Thousands of plaintiffs filed suit pursuant to the Price-Anderson Act, 42 U.S.C. § 2210(n)(2), which had been amended in 1988 to provide exclusive federal jurisdiction over all claims arising from a nuclear incident, otherwise known as public liability actions. The PAA allowed the plaintiffs to sue private parties, such as DuPont, and to consolidate the claims in federal district court. *Id.* While Congress wanted to ensure that victims of nuclear incidents recovered compensation, it also included govern-

ment indemnification provisions in the PAA to give private parties an incentive to participate in the nuclear industry. *See, e.g.,* S. REP. No. 100-70, at 14 (1988), *reprinted in* 1988 U.S.C.C.A.N. 1424, 1425-26.

The PAA provides that although federal courts have exclusive and original jurisdiction over claims stemming from nuclear incidents, the substantive rules of decision are provided by the law of the state in which the nuclear incident occurs. *See* 42 U.S.C. § 2014(hh). Plaintiffs therefore brought tort claims under Washington law, asserting that because Defendants were engaged in an abnormally dangerous activity, they were strictly liable for any Hanford-caused radiation illness.

On August 6, 1990, a group of plaintiffs filed a joint consolidated complaint in the Eastern District of Washington, alleging a class action against Defendants. In 1991, the district court consolidated any and all Hanford-related actions pending in various courts, directed preparation of one consolidated complaint, and designated specific lead counsel for all parties. In an order dated September 22, 1994, the district court addressed the issue of class certification and decided to reserve decision under Federal Rule of Civil Procedure 23(b)(3) pending further discovery on causation issues.

Accordingly, pending class certification, the litigation proceeded as a consolidated action. Throughout this period, the district court entertained a handful of dispositive motions, which led to two appeals to this court. In 2002, we heard *In re Hanford*, 292 F.3d 1124, challenging the district court's dismissal of plaintiffs who could not establish they received a "doubling dose" of radiation. We held that Plaintiffs' claims should proceed even if they could not show that Hanford radiation doubled their risk of illness, and we remanded for trial. *Id.* at 1139.

We also heard the appeal in the related case, *Berg*, 293 F.3d 1127. The *Berg* plaintiffs had not yet suffered from any ill-

ness, but sued Defendants for medical monitoring. We held that medical monitoring claims were not compensable under the PAA and upheld the district court's dismissal of those actions with prejudice. *Id.* at 1133.

After our decisions in *In re Hanford* and *Berg*, Judge William Fremming Nielsen steered the case toward resolution. The parties agreed to proceed with a bellwether trial, hoping it would reveal the strengths and weaknesses of their respective cases and thus pave the way for a settlement. The parties eventually agreed on twelve bellwether plaintiffs. Six of these plaintiffs had their claims dismissed on dispositive, pre-trial motions. The remaining six plaintiffs went to trial in April 2005.

The Bellwether Plaintiffs represent plaintiffs who suffer from various thyroid diseases they claim were caused by radiation emanating from Hanford. Plaintiffs Gloria Wise and Steven Stanton have thyroid cancer. Plaintiffs Wanda Buckner, Shirley Carlisle, and Kathryn Goldbloom suffer from hypothyroidism, a condition that slows the body's metabolism. Hypothyroidism is most frequently caused by Hashimoto's disease, an illness that Plaintiffs claim was caused by Hanford radiation. Plaintiff Shannon Rhodes suffers from lung cancer, which her doctors concluded was a form of Hurthle cell thyroid cancer that had metastasized from a thyroid lobe previously removed.

Prior to trial, the Bellwether Plaintiffs made several motions to strike Defendants' affirmative defenses. Defendants first claimed that the government contractor defense insulated them from all liability. The district court, in an unpublished 2003 order, struck the defense under Federal Rule of Civil Procedure 12(b), holding that the PAA displaced any such defense as a matter of law. In a published order, the court also ruled that plutonium production at Hanford was an abnormally dangerous activity warranting strict liability under Washington law. *In re Hanford Nuclear Res. Litig.*, 350 F.

Supp. 2d 871, 888 (E.D. Wash. 2004). It then limited the issues at trial to causation and damages. *Id.*

The primary dispute at trial was whether the amount of radiation to which each plaintiff was exposed was sufficient to be the cause-in-fact of his or her thyroid disease. There was extensive testimony that I-131 radiation causes Hashimoto's disease, a cause of hypothyroidism, and that I-131 can also be a contributing factor to thyroid cancer. The testimony revealed, however, that to date epidemiological studies can establish only that radiation of at least 100 rads is a contributing factor to thyroid illness. Some epidemiological studies hypothesize that 40 rads might cause Hashimoto's disease, but there are no data beyond that threshold.

Because many Plaintiffs were not exposed to radiation above 40 rads, and no Plaintiff was exposed to radiation above 100 rads, Plaintiffs had to present expert testimony that scientific extrapolation permitted a finding of causation below 40 rads. Their primary experts were Dr. Terry Davies, an endocrinologist, Dr. Sara Peters, a pathologist, Dr. F. Owen Hoffman, a causation expert, and Dr. Colin Hill, a radiation cell biologist. Plaintiffs also proffered the expert testimony of epidemiologist Dr. A. James Rutenber, but key parts of his testimony relating to causation were excluded.

After fourteen days of trial and four days of deliberations, the jury found in favor of two plaintiffs, Steve Stanton and Gloria Wise; the jury hung with respect to one plaintiff, Shannon Rhodes; and it found in favor of Defendants with respect to the remaining three plaintiffs, Wanda Buckner, Shirley Carlisle, and Kathryn Goldbloom. As damages for prevailing plaintiffs, the jury awarded Stanton \$227,508 and Wise \$317,251. Because the jury could not reach a verdict with respect to Plaintiff Rhodes, the district court declared a mistrial. Rhodes re-tried her claims in front of a second jury in November 2005, and the jury entered a defense verdict on all counts.

Rhodes, along with the three non-prevailing plaintiffs in the first trial, appeal a variety of evidentiary rulings, as well as the district court's jury instruction that under Washington law Plaintiffs had to prove "but-for" causation, rather than "substantial factor" causation. Defendants appeal the judgments entered in favor of the two prevailing plaintiffs, claiming the district court erred as a matter of law in striking the government contractor defense. In the alternative, Defendants argue that Plaintiffs may not proceed under a strict liability theory, because the I-131 emissions were within federally-authorized levels. They also contend the plutonium-production process was not an abnormally dangerous activity under Washington law and, even if it were, that Defendants qualify for the narrow "public duty" exception to strict liability.

Defendants also contend that prevailing Plaintiff Wise's suit was untimely under Washington's statute of limitations. See *Am. Pipe & Constr. Co. v. Utah*, 414 U.S. 538 (1974). Wise had filed an independent action in 1997, likely beyond the statutory period, but Defendants did not invoke *American Pipe* and the district court allowed Wise's claim to proceed as part of the pending class action.

Apart from the issues relating to the Bellwether Plaintiffs, Plaintiffs Pamela Durfey, Paulene Echo Hawk, and Dorothy George, who do not yet have symptoms of any thyroid disease, sued Defendants for the costs of medical monitoring. The district court, following this court's decision in *Berg*, 293 F.3d at 1132-33, held that the PAA precluded any medical monitoring claims that were unaccompanied by physical injury. Rather than remanding those claims to state court, however, the district court held that the PAA bestowed exclusive jurisdiction in the federal courts for claims arising from a nuclear incident, and that therefore the PAA's provisions preempted any state-derived medical monitoring claim. Accordingly, it directed entry of final judgment for DuPont under Federal Rule of Civil Procedure 54(b). The plaintiffs appeal this dismissal.

III. The Government Contractor Defense.

The overarching issue before us is Defendants' contention that the government contractor defense is available to them as a matter of law and that it provides complete immunity from liability if its substantive requirements are satisfied. The district court held that the affirmative defense was inapplicable as a matter of law because the provisions of the PAA cannot be reconciled with the defense and implicitly displace it. We review *de novo* the district court's conclusion that the affirmative defense is unavailable, *United States v. Griffin*, 440 F.3d 1138, 1143 (9th Cir. 2006), and we reach the same conclusion.

[1] The government contractor defense is by now an established component of federal common law, but it was first recognized by the Supreme Court less than twenty years ago in *Boyle v. United Techs. Corp.*, 487 U.S. 500 (1988). The defense is intended to implement and protect the discretionary function exception of the Federal Tort Claims Act ("FTCA"), 28 U.S.C. § 2680(a), which was enacted after World War II. The defense allows a contractor-defendant to receive the benefits of sovereign immunity when a contractor complies with the specifications of a federal government contract. *Boyle*, 487 U.S. at 511-12. As the Court said in *Boyle*, "[i]t makes little sense to insulate the Government against financial liability for the judgment that . . . equipment is necessary when the Government produces the equipment itself, but not when it contracts for the production." *Id.* at 512.

As a threshold matter, we agree with Defendants that the government contractor defense applies not only to claims challenging the physical design of a military product, but also to the process by which such equipment is produced. Accordingly, a contractor who agrees to operate a production facility pursuant to government specifications may qualify for the defense.

The issue here, however, is whether the PAA preempts reliance on the common law doctrine, either because the defense contradicts the federal statute or because the statute predates the defense. Congress is presumed to “legislate against a background of common-law adjudicatory principles.” *Astoria Fed. Sav. & Loan Ass’n v. Solimino*, 501 U.S. 104, 108 (1991). A federal statute enacted after a common law doctrine has been established will not therefore abrogate the federal common law rule unless the statute speaks directly to the question addressed by common law. *United States v. Texas*, 507 U.S. 529, 534 (1993). This is because “where a common-law principle is well established . . . the courts may take it as given that Congress has legislated with an expectation that the principle will apply except when a statutory purpose to the contrary is evident.” *Astoria*, 501 U.S. at 108 (internal quotations and citations omitted) (holding that the court should assume Congress drafted the Age Discrimination in Employment Act with the common law administrative estoppel doctrine in mind); *see also Pasquantino v. United States*, 544 U.S. 349, 359 (2005).

[2] Whether the PAA preempts the government contractor defense is therefore a two-step inquiry. We must first determine whether the government contractor defense was well-established at the time Congress enacted the operative version of the PAA. If so, we must determine whether a statutory purpose contrary to the government contractor defense is evident.

The defense fails the first inquiry. Defendants are not entitled to the government contractor defense, because the statute predates clear judicial recognition of any such defense. In addition, the statute’s comprehensive liability scheme is patently inconsistent with the defense and precludes its operation in this case.

[3] The Supreme Court’s decision in *Boyle* was filed on June 27, 1988. Less than two months later, the PAA was amended, on August 20, 1988, to include the pertinent lan-

