

**Radiation Control Program Faces Loss of Radiation Experts
and
Shortage of Qualified Candidates**

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Human Capital Crisis

What has been termed a “Human Capital Crisis” throughout government exists in Radiation Control Programs throughout the United States. Texas faces the same difficulties as other government agencies, needing the following in order to develop a viable workforce for the future:

- competitive pay and benefits
- active recruitment
- reform of antiquated, complicated hiring practices that fail to address skill level

The Health Physics Society states in “Human Capital Crisis in Radiation Safety,” a position statement adopted August 2001:

A critical shortage exists in the supply of qualified radiation safety professionals throughout a broad spectrum of activities within the United States....

...the current imbalance between supply and demand will significantly worsen in the near term after which it will soon become untenable.

The shortage of qualified radiation safety professionals will compromise the rigorous oversight necessary for the continued safe use of radiation for the benefit of the citizens of the United States.

Competitive Pay and Benefits

State salaries do not compete with private sector salaries. For purposes of comparison, Texas state benefits are considered by the Texas Department of Health to be 22.08% of salary. Therefore, state salaries shown in the charts for Texas may be considered to have benefits equal to a dollar value 22.08% higher than shown. Benefits for private sector health physicists are not known. Even when Texas salaries are considered with benefits included, they are not competitive with the salaries reported for private sector health physicists. Government cannot compete with the private sector for health physicists as the demand increases. The Health Physics Society notes that present demand for radiation safety professionals is approximately 130% of the supply. Solely related to attrition, demand during the next five years is expected to outpace supply by nearly 160%. (Health Physics Society position statement August 2001.)

In Texas, an estimated total of 45 senior personnel at the Bureau of Radiation Control are already or will soon be eligible for retirement (within the next five years). Beginning two or three years ago, retirements began to significantly reduce the number of senior employees. As of November 2001, the Division of Compliance and Inspection has 10 professional positions unfilled due to retirements or persons leaving for better pay.

Comparison of Salaries

Salary comparisons for health physicists are made between public sector salaries and private sector salaries for utility and non-utility employees.

Public Sector

Salary information is provided from 29 of the 32 Agreement States in “Annual Salary for State Radiation Control Personnel Technical and Management Staff, March 2001” by Weizhen Bao of the Bureau of Radiation Control. An Internet search produced the remaining 29 State’s job titles and annual salary ranges categorized by three different levels. Although some information may be incomplete, all the data was best analyzed to assign salary ranges by entry, medium and management levels.

State Radiation Control Program Information (March 2001) Number of States within Each Experience Level

<i>Starting Salary</i>	<i>Entry Level Experience</i>	<i>Medium Level Experience</i>	<i>Management Level Experience</i>
< \$30,000	13	6	1
\$30,000 - \$39,999	11 (includes Texas)	10 (includes Texas)	4
\$40,000 - \$49,999	3	4	6 (includes Texas)
>50,000		2	3

**State Radiation Control Program Information (March 2001)
Number of States Within Each Experience Level**

<i>Average Salary</i>	<i>Entry Level Experience</i>	<i>Medium Level Experience</i>	<i>Management Level Experience</i>
< \$30,000	7	0	0
\$30,000 - \$39,999	9 (includes Texas)	8	0
\$40,000 - \$49,999	10	9 (includes Texas)	4
\$50,000 - \$59,999	1	4	6
> \$60,000		1	3 (includes Texas)

Private Sector

Two surveys report private sector salaries. Data from one conducted by Oak Ridge Institute is reported as “entry, medium and high level experience” in order to compare with Texas salaries categorized similarly. Data from another by the Health Physics Society is given by educational level and regional variations. This is provided as additional reference.

Comparison with Texas – Compensation for Levels of Experience

“Salary Information for Health Physicists and Nuclear Engineers,” June 2001, was prepared by Oak Ridge Institute for Science and Education for the U.S Nuclear Regulatory Commission. This salary survey included utilities and non-utilities with 69 organizations responding. Salary information was collected for June 2001 for personnel working as nuclear engineers and health physicists. The salary information includes personnel at the B.S., M.S., and Ph.D. levels with zero, one, three, four to seven, and eight to ten years of professional work experience.

In the following table, information is provided for utility and non-utility health physicists. Non-utilities include private sector organizations and U.S. Department of Energy contractor-operated facilities. Government agencies, the military, academic organizations, and medical facilities are excluded.

**Salaries for Utility and Non-Utility Health Physicists
Benefits package unknown
(June 2001)**

<i>Entry Level Experience</i>	<i>Medium Level Experience</i>	<i>High Level Experience</i>
\$38,500 to \$67,900	\$45,700 to \$75,800	\$65,000 to \$96,000

Note: Range given includes starting and average salaries for all educational levels

Texas Government Salaries for Health Physicist
Benefits package 22.08% (not included in figures)
(September 2001)

<i>Entry Level Experience</i>	<i>Medium Level Experience</i>	<i>High Level Experience</i>
\$30,432 to \$43,620	\$34,308 to \$56,304	\$41,304 to \$63,672

Salary by Education Level and Region of the Country

Results from a private sector study published in the March 2001 issue of the Health Physics Society (HPS) Newsletter, for health physicists' salaries gives salary by educational levels and by region of the country.

March 2001 HPS Newsletter Private Sector Salary Information
Salary By Education Level

	Minimum	Maximum	Average
BS Degree	\$32,500	\$112,500	\$66,691
MS Degree	\$22,500	\$152,500	\$76,510
Ph.D. Degree	\$32,500	\$147,500	\$85,931

Salary By Region

	Minimum	Maximum	Average
Midwest (IL,IN,IA,KS,MI,MN,MS,NE,NK,OH,SD,WI)	\$27,500	\$142,500	\$67,163
Northeast (CT,ME,MA,NH,NJ,NY,PA,RI,VT)	\$32,500	\$127,500	\$71,989
South (AL,AR,DE,DC,FL,GA,KY,LA,MD,MS,NC,OK,SC, TN, TX, VA, WV)	\$32,500	\$152,500	\$75,262
West (AK,AZ,CA,CO,HI,ID,MT,NV,NM,OR,UT,WA,WY)	\$37,500	\$152,500	\$78,182

(Texas state program average technical salary = \$41,600)

Active Recruitment

The Bureau of Radiation Control through coordination with the Health Physics Society encourages students to participate as volunteers; however, no funds are available for paid internships. Additionally, the department is limited to employees by the “FTE cap” imposed by legislation. It is also difficult to interest new recruits in permanent employment when compensation is beneath the private sector wage and beneath salaries in federal positions.

Also, graduates with a B.S. in Health Physics do not usually have job experience and are only qualified for a lower grade position. Upon graduation, they can go to industry or the federal government which offers the equivalent of the upper range of the Texas salary.

Human Resource Management

The Health Physics Society reports that “agencies face an imposing challenge in attempting to fill certain mission-critical occupations because of increasing competition in the labor market.” (Health Physics Society position statement August 2001.) Human resource management policies impact this situation.

Rehiring Retirees: Waivers of Postings

As employees retire, the legislature has made provisions to allow the employee to return to full time work. (SB 587, 77th Reg. Session) The individual may then receive the state salary as well as draw retirement annuity. This makes the total compensation more competitive with the private sector salary. Previously, a waiver from posting could be authorized so that the individual could be rehired without interviewing other applicants. However, the Texas Department of Health Bureau of Human Resources has recently changed and clarified the policy for waivers of postings. There will be none. Any hire from outside the agency will have to go through the competitive process. This particularly impacts hiring retirees back. It results in the uncertainty of being rehired for the employee, as well as management conducting time-intensive job interviews for applicants who will compete with the retiree.

Retention Pay

The legislature authorized retention pay up to \$3000 with some stipulations. (Art. IX, Sec. 3.07). Two problems exist with this statute:

- (1) funding is unavailable; and
- (2) the increase is not substantial enough to offset offers of \$20,000 to \$30,000 higher than current salary, such as those recently offered by entities such as the Nuclear Regulatory Commission

Pay Increases

Legislative increases have not kept pace with private sector salaries and cost of living increases.

During the past decade, salaries in private industry have increased 50% to 90% compared to Texas increases which have been minimal if at all. (None since 1994 except monthly increase of \$100 in 1998 and 2000, and 4% or \$100 whichever is greater in 2001 in addition to a small increase in longevity pay.)

Private Sector Salary Increases for Health Physicists (1991-2001)

Year	<i>Entry Level Experience</i>	<i>Middle Level Experience</i>	<i>High Level Experience</i>
1991	\$31,800 to \$39,800	\$37,700 to \$46,100	\$38,900 to \$46,700
2001	\$38,500 to \$67,900	\$45,700 to \$75,800	\$65,000 to \$96,000

State of Texas Percentage Increases in Health Physicist Salaries

1994	0
1995	0
1996	0
1997	0
1998	\$100 per month increase
1999	0
2000	\$100 per month increase
2001*	\$100 per month increase or 4% whichever is greater

Source: State Auditor

*also included small adjustment in longevity pay

Recommendations

1. **TDH should include a request for increased funding in the next Legislative Appropriations Request to provide funding to upgrade appropriate health physics staff to the Environmental Specialist VI classification.**

The legislature created an additional job classification (B 15 level) that could be used for health physicists; however no additional funding was provided. A rider was placed on the Texas Natural Resource Conservation Commission legislation for contingency funding for increases. A similar rider would be useful to TDH.

Appropriation: targeted Salary increase. Notwithstanding other appropriations made by this Act relating to salary increases, in addition to amounts appropriated above to the Texas Natural Resource Conservation Commission, there is hereby appropriated \$650,000 in fiscal year 2002 and \$1,300,000 in fiscal year 2003 out of the General Revenue Fund for the purpose of making salary increases for select job classes. The TNRCC is hereby authorized to transfer the appropriation made pursuant to the appropriate strategy items listed above.

2. **TDH should allow the BRC to use salary savings for staff technical training and for retention bonuses.**
3. **TDH should allow senior BRC staff who want to retire and return to their positions be granted a waiver on posting their position and allow them to return a month after retirement.**
4. **TDH should request funding and FTEs to allow an intern program to be established to encourage students to enter the health physics field with a career at TDH.**
5. **The Legislature should make across the board salary increases to offer competitive salaries.**

Bibliography

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