Primary Science Reading Comprehension – (Worksheet 7)

Read the scientific article below and circle the letter of the correct answers to the questions about it.

Understanding Nuclear Power

Nuclear Power is one of several ways that modern utility companies and municipalities use to generate electricity. But the electricity a nuclear power plant ultimately produces actually starts with steam. This steam which results from the heating of water is an essential process for generating electricity. Nuclear power plants all have nuclear reactors. These reactors have a core of nuclear fuel (usually enriched uranium). When the uranium atoms are bombarded by neutrons, a fission reaction (or splitting of the atom) occurs, releasing heat and more neutrons. This fission process repeats itself over and over again, creating a chain reaction that heats water into steam. There are two types of nuclear reactors in use in the United States: (1) Pressurized Water Reactors (PWRs), and (2) Boiling Water Reactors (BWRs). PWRs keep water under pressure while it heats up to turn a steam turbine but does not boil. BWRs heat water while allowing it to boil to produce steam to spin a turbine. In all nuclear plant designs, the force of the steam spins an electric turbine that generates electricity. Roughly 19% of our nation’s electric power is produced by nuclear power plants. In the US there are currently 104 nuclear power reactors operating in 31 different states. Some states generate more than 50 percent of their electricity from nuclear power.

1. What fuel does a nuclear power reactor use?  a. Hot steam  
   b. Enriched uranium  
   c. Water

2. What causes nuclear fission?  
   a. Uranium atoms split when bombarded by neutrons  
   b. Atom bombs explode inside a reactor core  
   c. Uranium decays inside a nuclear reactor core

3. What device generates the electricity?  
   a. A steam powered turbine  
   b. A nuclear reaction in the reactor core  
   c. A hot water boiler

4. Nuclear power plants are in how many states?  a. Nineteen  
   b. All 50 states  
   c. Thirty-one

5. The 2 primary types of nuclear reactors are:  a. PWRs and BWRs  
   b. Fission reactors and turbine reactors  
   c. Steam reactors and diesel reactors
Key to Primary Science Reading Comprehension – (Worksheet 7)

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**Key to Understanding Nuclear Power**

Nuclear Power is one of several ways that modern utility companies and municipalities use to generate electricity. But the electricity a nuclear power plant ultimately produces actually starts with **steam**. This steam which results from the heating of water is an essential process for generating electricity. Nuclear power plants all have nuclear reactors. These reactors have a **core** of nuclear fuel (usually **enriched uranium**). When the uranium atoms are bombarded by **neutrons**, a **fission reaction** (or splitting of the atoms) occurs, releasing heat and more neutrons. This fission process repeats itself over and over again, creating a **chain reaction** that heats water into steam. There are two types of nuclear reactors in use in the United States: (1) **Pressurized Water Reactors (PWRs)**, and (2) **Boiling Water Reactors (BWRs)**. PWRs keep water under pressure while it heats up to turn a steam **turbine** but does not boil. BWRs heat water while allowing it to boil to produce steam to spin a turbine. In all nuclear plant designs, the force of the steam spins an electric turbine that generates electricity. Roughly 19% of our nation’s electric power is produced by nuclear power plants. In the US there are currently 104 nuclear power reactors operating in 31 different states. Some states generate more than 50 percent of their electricity from nuclear power.

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