

alternatives” will be added to a new replica. Security system will carry out significant changes on board the liner according to Palmer’s plans [2, 22].

It worth mentioning that on the night of 15 April 1912, when “The Titanic” drown down after collision with an iceberg there were 2224 persons, but there were only 16 lifeboats. They could fit only 1178 people. As a result, about 1500 people sank that night. Recently Palmer has presented drawings of the future liner. The vessel’s length will be up to 270 meters (269.1 – of “The Titanic”), 9 decks will accommodate 850 cabins. The capacity of “The Titanic II” will be up to 2.6 thousand passengers. “The Titanic” seated 2556 people, which were served by 908 crew members. Approximately 900 employees will serve the new ship. On the modern ship the heating pipes will be left, but they will not be used.

In general, Mr. Palmer cannot be called a superstitious man. Presentation of drawings was opened by the song of Celine Dion from the famous James Cameron’s movie. The company which is the owner of the mines on extraction of iron ore, coal and nickel in Australia will serve the operation of the future liner. It is called the Blue Star Line. In 1912 “The Titanic” owned to the White Star Line. It is expected that construction of the new ship will be completed in the second half of 2016. She was produced in China. According to Palmer’s plan the demand for tickets to the liner is very high, many of people are already ready to give \$1 million to get on the first flight to New York [3, 139].

Moreover, the new liner will completely repeat the route of the old one. She will come from the English port of Southampton and in six days, of course, if everything is well, will come to New York. “We will complete the journey. We will sail to New York on the ship that is designed for this purpose”, said Palmer to journalists. The Australian was not brave promising to the new ship long life: “Any ship will sink if she gets the hole”. However, global warming has done its work, and icebergs on the route of the liner cannot be found [4, 119].

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ИСПОЛЬЗОВАНИЕ ЭНЕРГИИ МОРСКИХ ВОЛН

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At the present stage of civilization the need for renewables increases. In difference from many other types of energy (nuclear power, industrial power system and others), energy of sea tides doesn’t run dry as it is supported by gravitation forces of the Moon and the Sun and doesn’t depend on climate changes. The main problem of non-traditional renewables is the low density of energy. So the density of energy less than 1 kilowatt per square meters is typical for wind, solar, geothermal installations. Wave energy possesses the more high density of energy. Sea waves accumulate wind power on the considerable space of acceleration. There are favorable climatic conditions for development of wave power engineering

on the coast of the Far East. Annual average potential of wave energy on the east coast is estimated approximately at 40 kilowatts per square meter [1, 59].

Our research was attracted by wave power plants of Oyster. The wave energy installations containing a vertical platform (leaf) which consists of the floats hinged to the base lying at the bottom and the piston pump are known. Waves move a vertical platform which puts into action the power-take-off device in the form of the pump forcing water in the pipeline to the hydro turbine connected with the electric generator. The OWSC advantages (Oscillating wave surge converter) are small costs of construction, ecological purity, and high efficiency. Shortcomings of the OWSC: the effective usage only on large waves when there is an intensive swinging of leaf, the possibility of shift and corrupting of constructions by the storm waves [2, 22].

The first technical contradiction is formulated due to the shortcomings. The floats of the leaf can have insufficient buoyancy for creation of the recovering forces. Their rigidity is possible to regulate by tension or weakening. Small natural frequency of oscillations of the flaps causes that on short waves it swings far from resonance and insufficiently intensively. In this case it is necessary to increase significantly natural frequency of the system; however, it is technically difficult to make it only due to buoyancy increase. During using tide the leaf can be in deepening that reduces wave action, and in case of a low tide the leaf either sticking out significantly above water level, reducing the wave pressure area, or has inclined position from equilibrium that leads to reduction of dynamic pressure of waves to its surface. Even in the absence of essential tides the leaf has insufficient efficiency as when passing a wave trough it sticking out above from water, and when passing wave crest it is deepened. In both cases hydrodynamic pressure is less on the leaf, than on a wave surface. Besides, in some oscillating phases the wave crests can shock on the leaf sticking out above water. It is dangerous for durability. As a result reliability of the construction decreases. System itself provides the highest efficiency of wave’s energy conversion in different conditions [3, 139].

We have used 40 standard techniques of TRIZ and marked out the most suitable for our installation. Principle of dynamism – characteristics of object shall change so that to be optimum at each stage of operation (in roll forward and rollback of a wave); to divide object into the parts capable to move relatively each other. Principle of sampling action – natural frequency of system oscillations is to be changed with the change of wave’s parameters in order to get resonance with waves. The system of reactive forces controlling is necessary for this purpose. In the installation of OYSTER it can be done by controllable water filling or by air blowing of floats tanks. But it is too slowly. Principle of the continuity of the useful effect – all parts of object shall work with full loading at each phase of wave passing. The leaf slides along the guide frame, automatically falling and rising, tracing water level and waves profile by buoyancy forces [2, 119]. Improvement of wave converters goes on the way of receiving more controllable technical systems which according to the law of increasing vepol degree: have to more complex vepol (substance – field) model. Wave’s energy converters in the form of hinged arm rafts (Kokkerell’s raft, Pelamis) are known. They have rather low efficiency and at least 3-4 hinged float sets are required for it increasing. Besides there is a problem of devices fixing on anchors. It is offered to combine systems with a vertical flap and a horizontal raft for efficiency increasing of wave’s energy.

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ХАКЕРСТВО КАК НОВАЯ БОЛЬШАЯ ПРОБЛЕМА СОВРЕМЕННОСТИ

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Nowadays there are a lot of things based on information. Every establishment around has its own information and wants to keep it safe. In the computer security context, a hacker is someone who seeks and exploits weaknesses in a computer system or computer network. Cyber spying is the act or practice of obtaining secrets without the permission of the holder of the information, from individuals, competitors, rivals, groups, governments and enemies for personal, economic, political or military advantage using methods on the Internet, networks or individual computers through the use of cracking techniques and malicious software.

More and more information is stolen from light-minded companies which just didn't care about such a possibility. What do they need to prevent these attacks? There are a lot of methods to defend computers from external actions. And these specialists should know all of them, to keep all information inside.

Of course, nobody would start some secret negotiations in room with perfect opportunities to be overheard or recorded. Special meetings require special places. That is where our specialists start their work. They should know all the ways of overhearing and spying to protect the room from these actions. As long as information [1] is the most powerful and the most important thing on this planet, everybody will need to protect it. Information security specialists are the right people for this job because they are the only ones who really can handle this and continue to learn. The studying is hard, and the job is even harder, but the job students will get, may be the most important one on the whole planet.

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РАЗРАБОТКА ИГР

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Video game development is the process of creating a video game. Traditional commercial PC and console games are normally funded by a publisher and take several years to develop. Indie games can take less time and can be produced cheaply by individuals and small developers. The indie game industry has seen a rise in recent years with the growth of new online distribution systems and the mobile game market.

The first video games were developed in the 1960s, but required mainframe computers and were not available to the general public. Commercial game development began in 1970s with the advent of first generation video game consoles and home computers. However, approaching the 21st century, ever-increasing computer processing power

and heightened consumer expectations made it difficult for a single developer to produce a mainstream console or PC game [1].

Mainstream PC and console games are generally developed in phases. First, in pre-production, pitches, prototypes, and game design documents are written. If the idea is approved and the developer receives funding, a full-scale development begins. The games go through development, alpha, and beta stages until finally being released. Modern games are advertised, marketed, and showcased at trade show demos. Mobile games are, in general, much quicker to develop than the mainstream PC and console games. Usually mobile games are published as early as possible, often after five months of development, in order to see how they perform [2].

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ЭКОЛОГИЧЕСКИЕ ПРОБЛЕМЫ В ТЕПЛОЭНЕРГЕТИКЕ

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The energy production and consumption result in environmental damage. The world's power demands are expected to rise 60% by 2030. In 2007 there were over 50,000 active coal plants worldwide and this number is expected to grow. In 2004, the International Energy Agency (IEA) estimated that fossil fuels will account for 85% of the energy market by 2030.

World organizations and international agencies, like the IEA, are concerned about the environmental impact of burning fossil fuels, and coal in particular. The combustion of coal contributes the most to acid rain and air pollution, and has been connected with global warming. Due to the chemical composition of coal there are difficulties in removing impurities from the solid fuel prior to its combustion. Pollution from coal-fired power plants comes from the emission of gases such as carbon dioxide, nitrogen oxides, and sulfur dioxide into the air.

Over 25% of coal fired at the thermal coal-fired power plants in Russia has ash content of above 40% which makes the problem of flue gas cleaning of particulate matter rather urgent. In Russia the environmental safety of energy facilities must be improved. And this problem is becoming more acute due to the energy facilities aging. From technical and technological point of view the task of the environmental safety ensuring is quite a solvable problem, but it is complicated by the lack of money investment.

Today the problem of SO₂ emissions is being solved at the majority of power stations by coal and gas combined combustion, or by low-sulfur coal addition. For example, the share of the high-sulfur coal from the near Moscow coal field fired at 300 MW units of the Ryzan TPP is reduced to 20%. Coal from the Kuzbas, Siberia and the Far East is low-sulfur coal and is now fired without using the DeSO_x systems.

Despite the urgent need to reduce environmental pollution and increase power generation efficiency, marginal electricity production cost at the coal-fired power plants will be the same for several years. Further improvement of the economic situation in Russia will bring along wider introduction of gas-fired combined cycle plants.