

Nekoma, ND - The US Army Corps of Engineers, which is in charge of Safeguard Antiballistic Missile (ABM) construction, hopes to pour about 608 million pounds of concrete at different sites this construction season.

It's a mammoth job. The concrete to be used is enough to fill the big, ready-mix transport trucks over 25,000 times; enough to lay concrete for more than 40 building complexes the size of the Fargo Civic Center.

According to Col. Vernon K. Davis, Corps of Engineers deputy engineer, the Corps' construction contract with Morrison-Knudsen Construction Co. is the largest single contract ever let by the Corps in its construction work.

The Corps hopes "to close in all major structures" this construction season, Col. Davis said. He is confident this can be done, he said, because last year's construction work continued into late December.

After the Corps finishes the heavy concrete and construction work, the US Army Site Activation Command (SACOM) will take over and begin work on weapons systems.

The original cost of the ABM project was set at about \$160 million. Col. Davis said the costs of the Corps' share of the work alone has now risen by about \$7.8 million to \$145 million because of inflation.

The sites under construction include four Remote Launch Sites (RSL) for the speedy Sprint missiles, the Missile Site Radar (MSR) and Missile Site Command Building (MSCB) and the Perimeter Acquisition Radar (PAR).

While concrete work on the sites is being pushed, other work has also increased. The total work force is now about 2,900.

The MSR and MSCB, all part of the same complex, are being built near Nekoma. When completed, the MSR will protrude from the ground, 77 feet high, in the shape of a great four-sided pyramid.

The MSCB will be under the pyramid - and underground. It will be 152 feet square and about 80 feet deep. Adjacent to this building and connected to it by a tunnel will be an underground power plant 180 feet long and 301 feet wide (one foot longer than, but otherwise the same size as a football field).

Also included in this complex will be an underground heat sink, 219 feet in diameter and about 30 feet high, for the power plant; underground launch silos for 16 Sprint missiles and 30 Spartan missiles; a nuclear warhead handling station and a missile repair station.

The PAR site, located about 30 miles northeast of here, is similar in construction to the MSR site. Facilities there include another power plant and a radar building about 200 feet square and 115 feet high. The wall of the radar building facing north will be slanted back at a 25-degree angle. The radar will be built into this wall.

Both ABM radar systems are immobile and are placed under concrete, in contrast to most conventional radar. A new radar concept utilized in the ABM radar allows this.

In contrast to conventional radar, which uses a rotating steel dish to beam and pick up radar rays, the MSR and PAR are "phased-array" radars; they can be placed in concrete and hardened - made less vulnerable to attack.

With conventional radar, sweeping radar beams are sent out by the rotation of the radar dish. They are sent out and picked up at one point, by one "eye," at the center of the dish.

With "phased-array" radar, the beams are emitted and picked up by thousands of radar "eyes," all under concrete. The eyes are electronically, and not mechanically, controlled to achieve a sweeping effect like the effect achieved with the movement of the dish radar.

The PAR is a long-range radar. It faces the north - where the missiles would presumably come from - and watches for incoming ICBM's.

The MSR is a more exact radar and the men in the Missile Site Control Building will use it to pin-point missiles for targeting.

Once incoming missiles are targeted, the Safeguard systems' defensive missiles, designed to destroy offensive missiles while they are in outer space, can take over.

The size and differences between a Spartan and Sprint missile are roughly analogous to the differences between a Fourth of July bottle rocket and quarter-mile rocket.

The Spartan is about 55 feet long, has three stages, a range of about 600 miles and a two megaton nuclear warhead. The Sprint is about 27 feet long, has only one stage, a range of about 25 miles and a two kiloton warhead. Both use solid propellant.

While there is only one launch site for the long-range Spartan missiles, there will be five launch sites for the short-range Sprints.

In the event of an attack, the Spartans would be used to knock out incoming missiles while they still are in deep space. The Sprints will be used to "plug any gaps" left by the Spartans.