1. **IS PRESSURE ADEQUATELY CONTROLLED?**

Include pressure regulating valves, pressure regulators on laterals, and VFD (variable frequency drive) pumping systems if there are elevational changes or if the system is being run differently than it was originally intended.

2. **CAN YOU TIE IN AUTOMATION?**

If you're considering automating your system in the future, plan by installing hydraulic valves that allow for automation. Ask your supplier to include in the design pump controls and/or pressure relief necessary for an automated system. Plan for and include water storage facilities.

3. **IS THE DESIGN SUITED FOR THE SITE CONDITIONS AND POTENTIAL OPERATIONAL CHANGES?**

One of the easiest mistakes to make is to not plan adequately for potential changes in irrigation practices. Never buy an under tree sprinkler system with too wide of sprinkler spacing because it is intended for frost control only. These systems nearly always get used for irrigation at some point in the future. On steep slopes, sprinkler spacings should be closer to compensate for lost throw radius caused by sloping terrain. Anticipate sites that may be susceptible to wind and mitigate the effect with closer than normal sprinkler spacings and scheduling changes.

4. **IS THE STREAM HEIGHT OF SPRINKLERS TOO HIGH FOR THE CROPPING SYSTEM PLANNED?**

Many of the trellis systems being installed today are placing the lowest wire at 24 to 30 inches above the ground. This will result in fruit hanging 18 inches off the ground. The fruit, leaves and limbs obstruct sprinkler streams which cause more water (than expected) to be applied on trees that are closest to sprinklers. Knowing that the height of the stream in the field is the sprinkler stream height plus the mounting height of the sprinkler, choose a Rotator sprinkler with a low stream height.

5. **IS THE DENSITY OF SPRINKLERS HIGH ENOUGH FOR THE DENSITY OF TREES?**

As tree density increases, so should sprinkler density to counter the effects of obstruction from tree trunks, limbs, leaves and fruit. Growers with a sharp eye have recognized the value of making sure sprinkler spacings are not too wide. It's a small investment at planting time to go with a little closer sprinkler spacing — and it pays big returns in the future!
Nelson's complete line of Rotator® sprinklers offers many solutions to meet your tree & vine and solid set irrigation needs. More uniform water distribution patterns can be achieved, reliability is enhanced, application rates are reduced, costs and maintenance are lowered, and riser vibration is eliminated with this revolutionary sprinkler technology.

**Crop Specific Solutions A to Z**

Apples, Bananas, Carrots, Dates, Edamame, Filberts, Grapes, Hay, Ice-burg Lettuce, Jalapenos, Kale, Lemons, Melons, Nursery Stock, Onions, Pecans, Quince, Rice, Strawberries, Tea Plants, Ugli Fruit, Veggies, Walnuts, Xigua, Yams, Zucchini
They’re like family, man.”

“Since using Nelson sprinklers on the farm we’ve seen good uniformity from pivot point to end gun.”

~ Mike Hawman of Hawman Farms has been farming in the Hermiston, Oregon area since 1982. He grows Perennial Rye Grass, Sudan-grass and Seed Corn.

CONTROL VALVES
Proper air and water control are essential to an efficient irrigation system. Improper hydraulic design of your irrigation system can lead to pressure fluctuations and water hammer which can damage pumps, break pipes, and decrease flow efficiency.

PRESSURE REGULATORS
Field-proven in tough environments, Nelson regulators offer precision accuracy and proper sprinkler operation over the life of a sprinkler package. Patented Single Strut Seat design minimized debris hang up.

3000 SERIES PIVOT SPRINKLERS
Built around the foundation of the 3TN quick-change nozzle system, Nelson 3000 Series Pivot Sprinklers provide the best water application solutions for your specific GeoCropical® needs.

END OF PIVOT SOLUTIONS
Considering the cost-effectiveness of putting additional land into production, an end gun alternative shouldn’t be overlooked. Choose from the SR75, SR100, SRNV100 and/or the new Low Pressure (15-30 PSI) R55A.
End of Pivot Solutions

Today, irrigating valuable land in the corners of pivots provides quick payback. Nelson’s engineers are providing innovations to make this even easier and with improved performance.

NEW! R55A
No other END OF PIVOT SPRINKLER works in the low pressure range of 15-30 PSI and provides up to 10 additional irrigated acres (on a 1/4 mile pivot, irrigating full circle).

- LOW PRESSURE (15-30 PSI / 1-2 bar)
  - No booster pump required.
- UP TO 50’ (15 m) RADIUS
  - Up to 10 acres (4.1 ha) irrigating full circle on a ¼ mile (0.4 km) pivot.
- COST EFFECTIVE
  - Costs 50% less than traditional brass impacts.
  - Irrigate more ground with less money.
- VERSATILE
  - Operate continuously, corners only, alone or as a secondary end gun.
- UNIFORMITY
  - Fills in the pattern of high-volume end guns.
- EFFICIENCY
  - Low trajectory streams and large droplets penetrate the wind and resist evaporation and drift.
Couple the R3000 Rotator with the Single Strut Pressure Regulator and you have the most reliable, best performing sprinkler package components available. The R3000 Rotator is based on technology 25+ years field-proven. No other sprinkler has attained higher CU numbers and it has the widest throw available on drop tubes. It’s all about spreading the water out — so the soil and crop have the water they need in the way they need it. The Single Strut Regulator has patented technology that allows for debris to pass more easily. Less plugging, better performance.
O3000 ORBITOR
New “Finer Droplet” Purple Plate

The purple plate delivers a consistently smaller droplet — ideal for germination of crops and soils requiring finer droplets.

ORBITOR FEATURES INCLUDE:
• Patented bracketless design
• Streamlined for in-canopy applications
• High performance in poor water conditions — no body struts for debris to hang up
• Expect long wear life and durability

We are pleased to offer the plastic-cover version of the O3000 Orbitor. This sprinkler does not have the weighted cover like the initial product offering. This makes it a great retrofit option for systems with spray heads and poly weights. It requires 3/4” NPT threaded weights only. Do not use any other slip weights. Pressure regulate to 10 psi.

Go to nelsonirrigation.com for mounting details.
Bob Rupar, Vice President and Key Player of Nelson Irrigation for over 40 years tells his story. He knows these products just about as well as anyone, and he’d like to share his current thinking.

It seems like I grew up with the Big Guns, both because of my work at Nelson Irrigation Corporation and on our family farm and ranch. I hated hand lines, so the Guns were a natural solution. In the early days, we moved guns around on tripods with aluminum pipe. The Guns worked just fine, but were hard work at inconvenient times of the day.

In the early 1980’s Nelson perfected what we call the **QUICK COUPLING VALVE SYSTEM (QCV)** that allowed you to connect and disconnect a gun from the valve while it was still under pressure. It is the only product of its kind and it works flawlessly in my opinion. When the QCV came on the market, I started to bury PVC pipe to feed the QC’s so we could get rid of the aluminum pipe. Life got a lot easier, but we still were plagued by the task of having to move the guns every few hours (about once every 4 hours) and I can remember the many times I had to get up and move guns in the middle of the night, as crazy as it seems in retrospect.

I spent many years trying every way imaginable to automate the guns with the idea of sequencing through a series of guns and then moving them to new locations once a day. I tried several battery operated systems; all of the wireless systems that proved to be lacking; and finally I took one 15-acre field and hard wired in automated solid set guns. One gun and solenoid valve on every riser. It was very expensive, but very nice, until I started having gophers eating the wires, lightning taking out the solenoids and lots of problems keeping the wire connections water tight. To say nothing about me ripping up the wire where it was not buried as deep as I was told it was buried. Finally, in frustration, I abandoned the system, but did not abandon my desire to end up with a system that made sense.

Then, along about 5 years ago, Nelson got the idea to enter into a development program on a **NEW WIRELESS CONTROL SYSTEM** to operate our line of control valves. Naturally, I was to become one of the Beta testers of this system with the first automated, wireless guns going at my place in 2011. From previous experience, I was leery of radio controls and the problems I had always heard about. Right out of the gate, we did have some problems, but we have a great engineering team at Nelson and they simply solved all of the early on problems. In 2012 we had a great season and in 2013, the system worked flawlessly except for a couple of plugged solenoids from dirty water. Wow! I cannot tell you what a pleasure it has been to operate this system.

I now have two kinds of automated, wireless Big Gun systems on my property and they are both worthy of consideration:

**AUTOMATED SOLID SET BIG GUNS.** In this system, there is a gun with its own valve and radio receiver at each gun location in the system. This is the Cadillac of systems. These systems are in operation all over the globe, literally. And what we have now brought to the party is the wireless technology to operate them. This system virtually eliminates labor and operates by push button control.

**MOBILE GUNS.** I am in that group of land owners that has a tough time justifying the cost of the solid set guns, so I have worked diligently as a tester for our team as they came up with a system that is still automated, still takes advantage of the gun system, but is much more affordable. (Please go to our web site to read all these details.)

The main thing you accomplish with the automated gun system is the savings of labor and the convenience of operation. Automation changes irrigation to an enjoyable task instead of hard and inconvenient labor. Automation also gives you the tool to put down exactly the amount of water that the crop needs. No more, no less. You can be as exact as you wish to be and you are not at the mercy of the irrigator who “tells” you he put on 4 hours of water but accidently gave you 6 hours because he slept in. Automation is the future and Nelson Irrigation has some tools that make this so easy you won’t believe it!
The American Society of Agricultural and Biological Engineers (ASABE) recently announced that Nelson Irrigation Corporation has won an AE50 award. Nelson Irrigation Corporation developed the TWIG Wireless Control System deemed one of the year’s most innovative designs in engineering products or systems for the food and agriculture industries. The TWIG system is featured in the January/February 2014 special AE50 issue of ASABE’s magazine Resource: Engineering & Technology for a Sustainable World.

The TWIG is a reliable automation solution for irrigated agriculture. Installation is quick and easy: mount the TWIG to a Nelson control valve, and then program the TD200 to create a schedule for automatic valve sequencing. The simple interface of the TWIG and TD200 controller make it easy to automate an entire irrigation system, regardless of the system type or the size of the operation. Whether managing a large Big Gun® dust suppression system, an apple orchard, multiple zones of a drip system, or miles of sprinklers on row crops, the TWIG can tie the components together without the expense of trenching and wires. The controller contains watering schedules that operate each valve. After it automatically discovers all valve modules, the controller is programmed at one location. All valves are synchronized. Program setup consists of simply grouping all valves that irrigate at the same time. Programs are easily named by the user to indicate the purpose of valve arrangements and the function of irrigation schedules.

LIMITED AVAILABILITY — PLEASE CONTACT FACTORY.
The Original Big Gun®

In the field of large-volume sprinklers, Nelson Big Guns® are recognized the world over as the leader in quality, performance and technical support. They are engineered and precision manufactured for heavy-duty reliability and long wear life. Every Nelson Big Gun® is subjected to the toughest inspection testing and quality control standards in the industry. Robotic welding and on-the-shop-floor quality assurance tests with computer controlled coordinate measuring machines ensure that every Big Gun part is of the finest quality possible. Individual water testing of every complete gun is conducted so quality is second to none.
Control Valve Solutions

RATE-OF-FLOW

Add the Rate-Of-Flow (Model D18) control to regulate the flow rate during system start-up.

Nelson Irrigation provides a versatile line of control valves that can be configured for your specific application. A variety of innovative and simple control pilots can be used to maintain stable hydraulic conditions.

The Rate-of-Flow control pilot is used to regulate the flow rate during system startup. This helps to prevent water hammer or surges caused by rapid filling of the pipeline which can damage system pipes. The Rate-of-Flow pilot automatically throttles the valve by using a paddle to sense velocity in the pipe upstream of the valve. The paddle is extremely accurate and efficient because it works independent of pressure and causes insignificant pressure loss. The control pilot has a calibrated adjustment screw and can work over a wide range of flow rates. It is designed to be installed upstream of the valve but can optionally fit directly into the valve to accommodate tight installations. Scan this QR code to view our Rate-of-Flow simulation.
Bart Nelson Wins Honor from Washington State Potato Foundation

The Foundation had no idea what it was in for when it nominated and awarded Bart Nelson with the Industry Leadership Award for 2014. Bart, CEO and Chairman of the Board of Nelson Irrigation Corporation has been on Cloud 9 for weeks. Potato country has been near and dear to him since he was a traveling salesman back in the 70’s. He has had the pleasure of working with some of the world’s finest dealers and farmers for years and he is so incredibly thankful for the opportunity to reminisce and spend time with great friends. Thanks to everyone!

Bart Nelson with Lynn Olsen (2012 Industry Leadership Award Winner)